SAMSUNG

8mm CAMCORDER

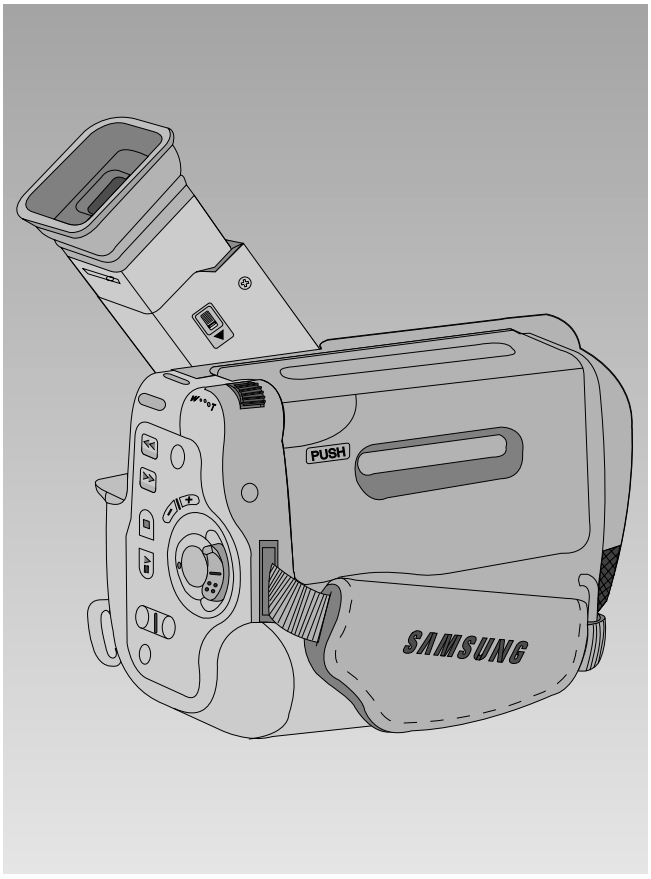
VP-A20/VP-A21
VP-A22/VP-A23

8

SERVICE Manual

For mechanical disassembly and adjustment, refer to the "Mechanical Manual" (DE-6 ⟶ AD68-30200A).

8mm CAMCORDER



CONTENTS

1. Precautions
2. Reference Information
3. Product Specifications and Comparison Chart
4. Disassembly and Reassembly
5. Alignment and Adjustment
6. Exploded View and Parts List
7. Electrical Parts List
8. Block Diagrams
9. PCB Diagrams
10. Wiring Diagram
11. Schematic Diagrams

1. Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

2. When reinstalling the chassis and its assemblies, be sure to restore all pretective devices, including : control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people--particularly children --might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

   If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.

4. Leakage Current Hot Check (See Fig. 1) :
   Warning : Do not use an isolation transformer during this test. Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, *Leakage Current for Appliances*), and Underwriters Laboratories (*UL Publication UL1410, 59.7*).

5. With the unit completely reassembled, plug the AC line cord directly the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known erath ground (metal water pipe, conduit, etc.) and all exposed metal parts, including : antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

6. X-ray Limits :
   The picture tube is designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the picture tube only with one that is the same type as the original.

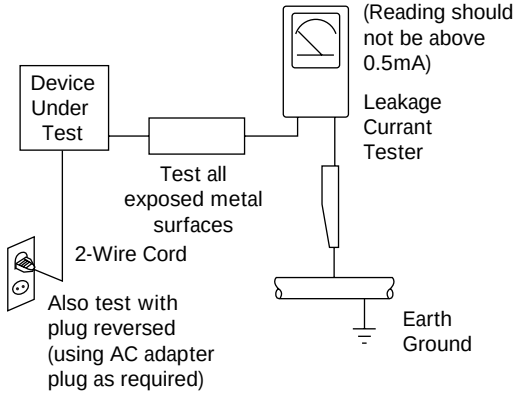

(Reading should not be above 0.5mA)
Device Under Test
Leakage Currant Tester
Test all exposed metal surfaces
2-Wire Cord
Also test with plug reversed (using AC adapter plug as required)
Earth Ground

Fig. 1 AC Leakage Test

7. Antenna Cold Check :
   With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong.
   Connect the other lead to the coaxial connector.

8. High Voltage Limit :
   High voltage must be measured each time servicing is done on the B+, horizontal deflection or high voltage circuits.

   Heed the high voltage limits. These include the *X-ray protection Specifications Label*, and the *Product Safety and X-ray Warning Note* on the service data schematic.

9. Some semiconductor ("solid state") devices are easily damaged by static electricity.
   Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

10. Immediately before handling sny semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging Wrist-strap device. (Be sure to remove it prior to applying power--this is an electric shock precaution.)

11. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.

12. Design Alteration Warning :
    Never alter or add to the mechanical or electrical design of this unit. Example : Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

13. Hot Chassis Warning :
    Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.

    To confirm that the AC power plug is inserted correctly, do the following : Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.

14. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, *regardless of the AC plug polarity*. These units can be safely serviced *only* if an isolation transformer inserted between the receiver and the power source.

15. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

16. Always connect a test instrument's ground lead to the instrument chassis ground *before* connecting the positive lead; always remove the instrument's ground lead last.

17. Observe the original lead dress, especially near the following areas : Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.

18. Picture Tube Implosion Warning :
    The picture tube in this receiver employs "integral implosion" protection. To ensure continued implosion protection, make sure that the replacement picture tube is the same as the original.

19. Do not remove, install or handle the picture tube without first putting on shatterproof goggles equipped with side shields. Never handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; do not try to remove such "permanently attached" yokes from the picture tube.

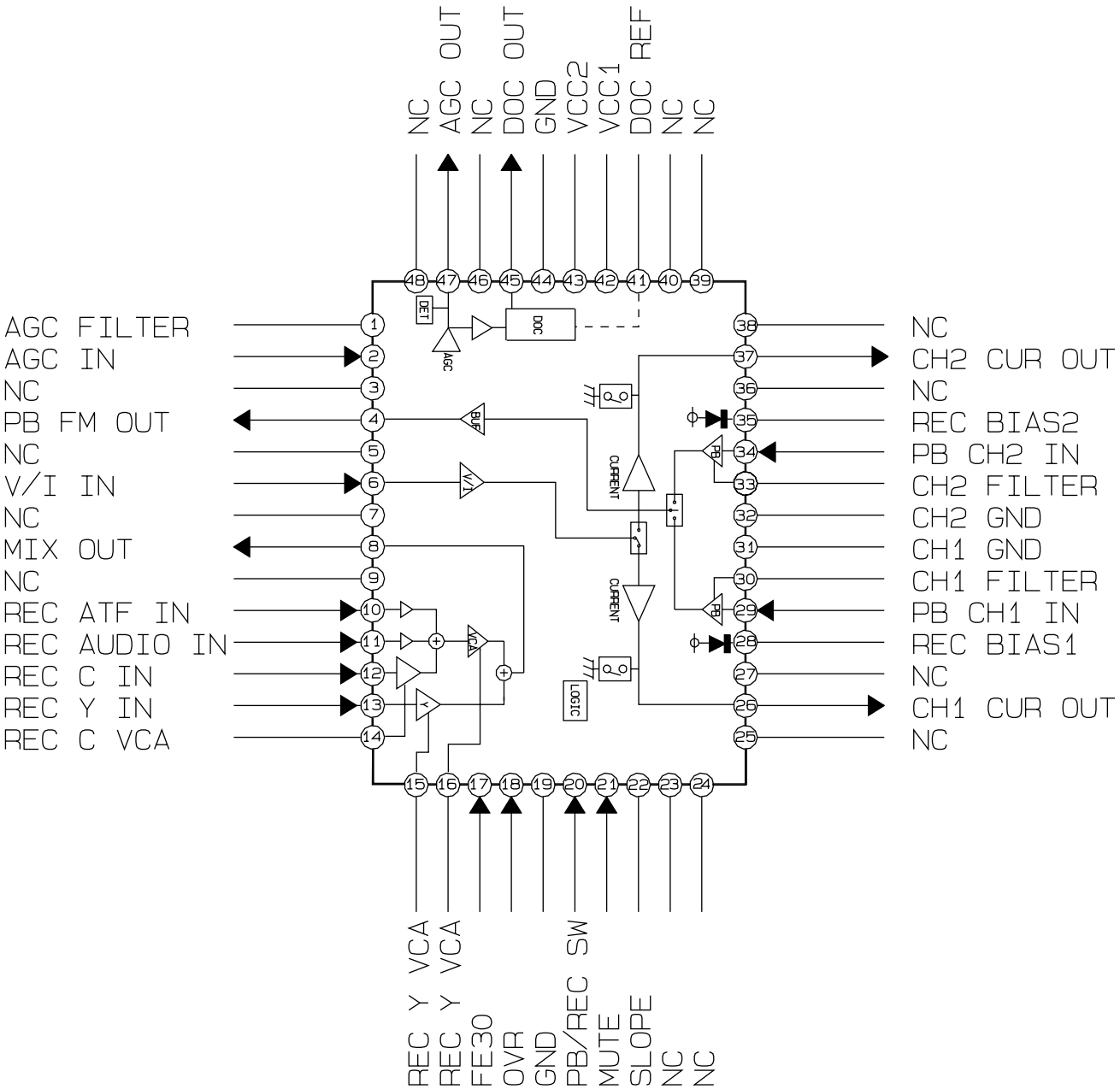
20. Product Safety Notice :
    Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original--even if the replacement is rated for higher voltage, wattage, etc.

    Components that are critical for safety are indicated in the circuit diagram by shading, (or).
    Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

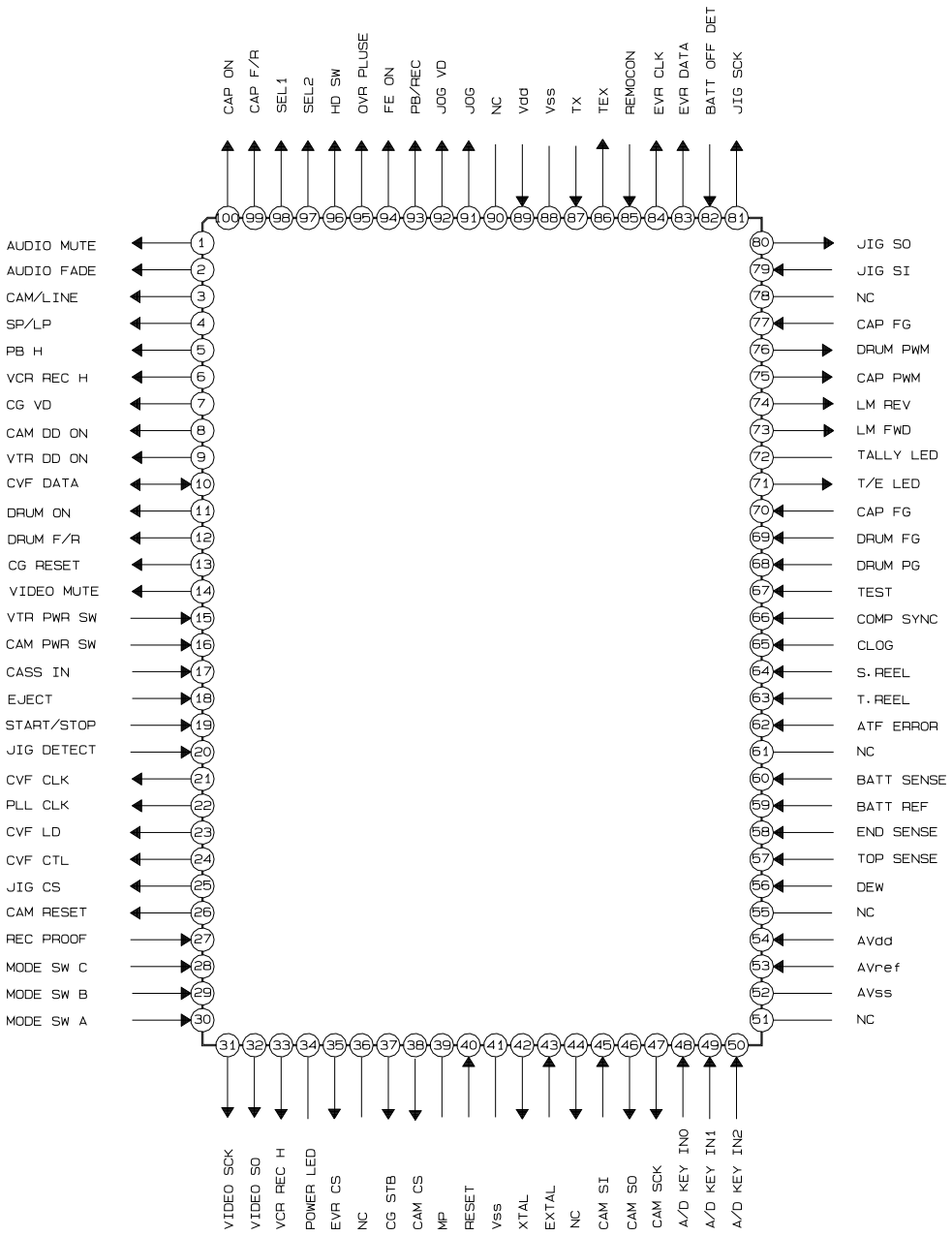
2. Reference Information

2-1 IC Blocks

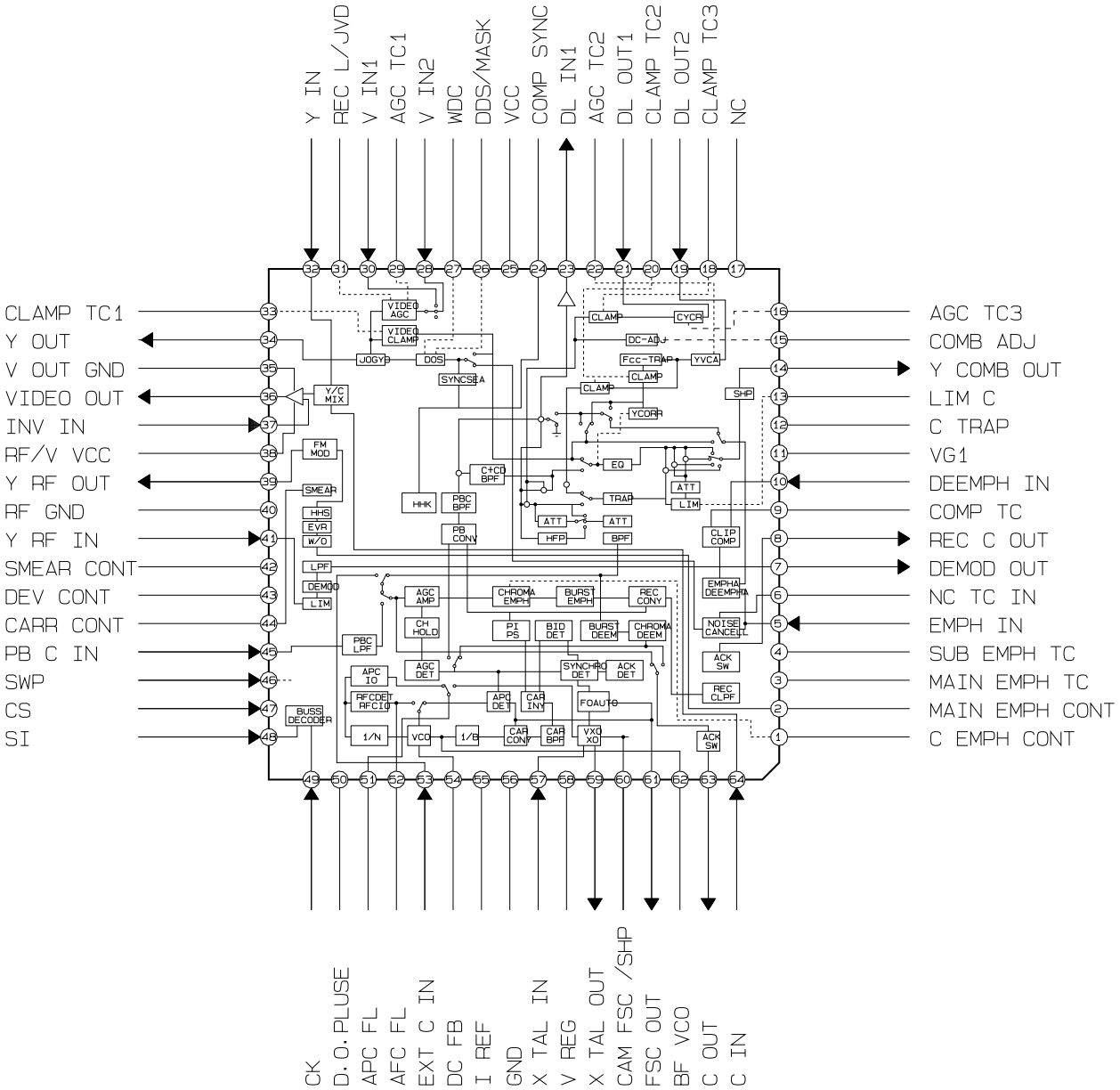
2-1-1 IC101 (M52369FP)



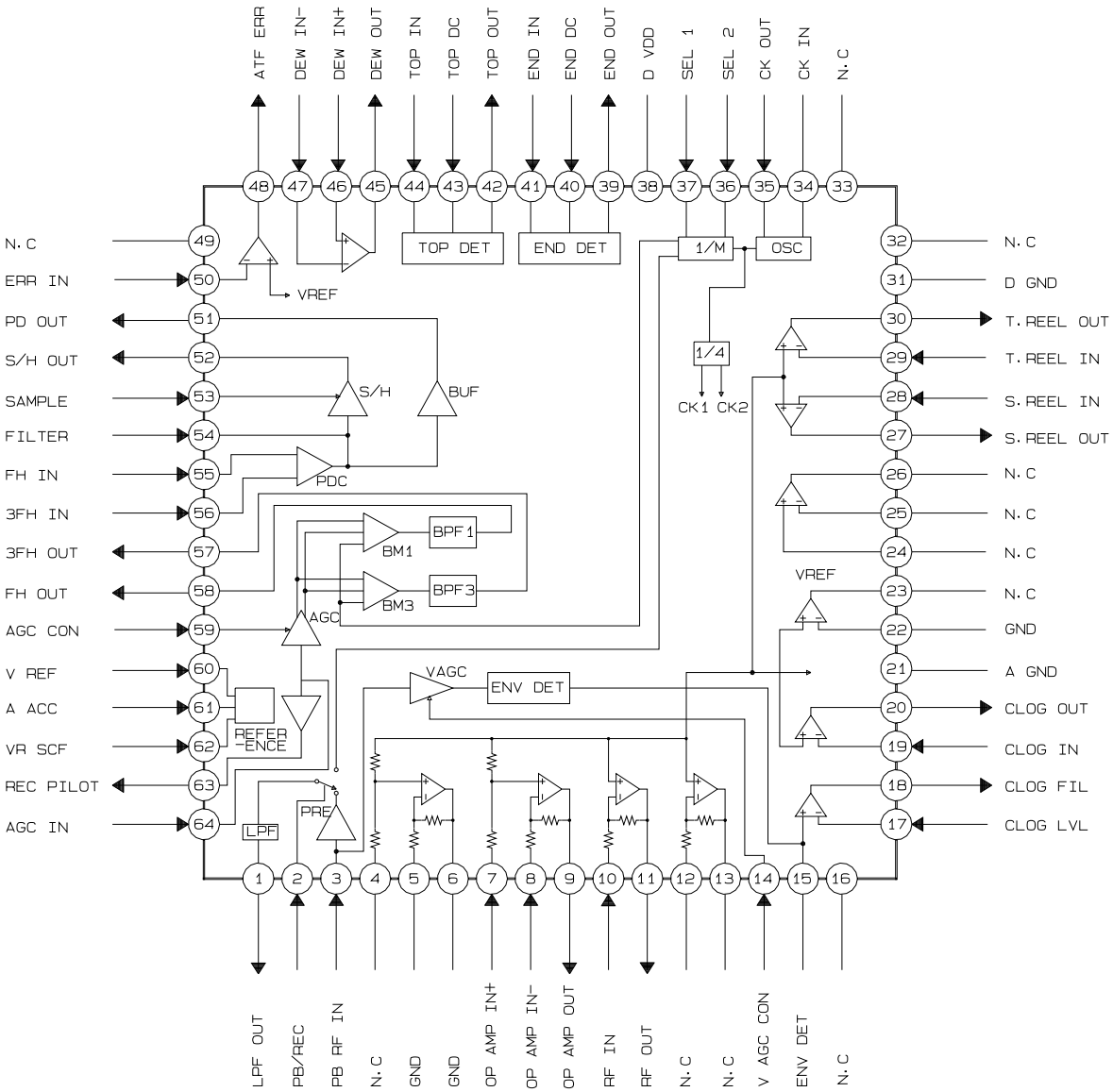
2-1-2 IC601 (CXP87240A)



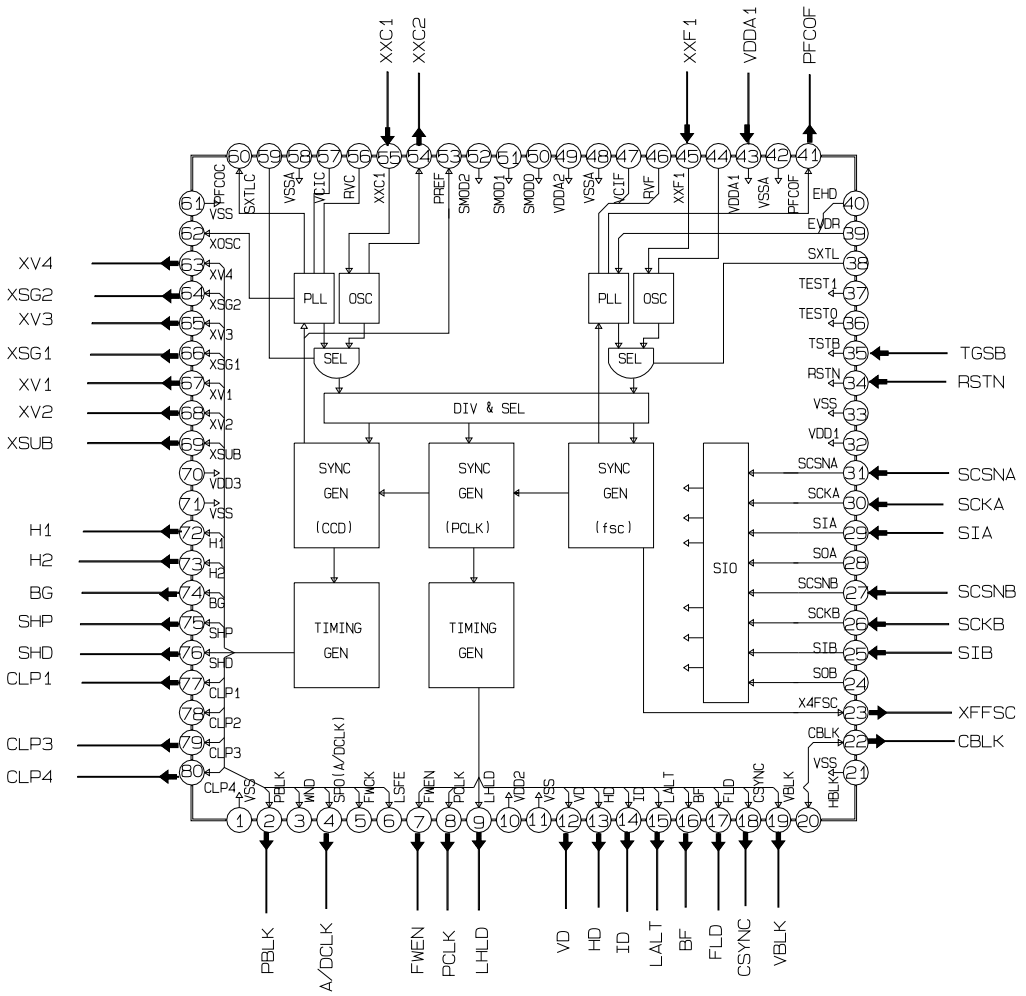
2-1-3 IC201 (CXA1700R)



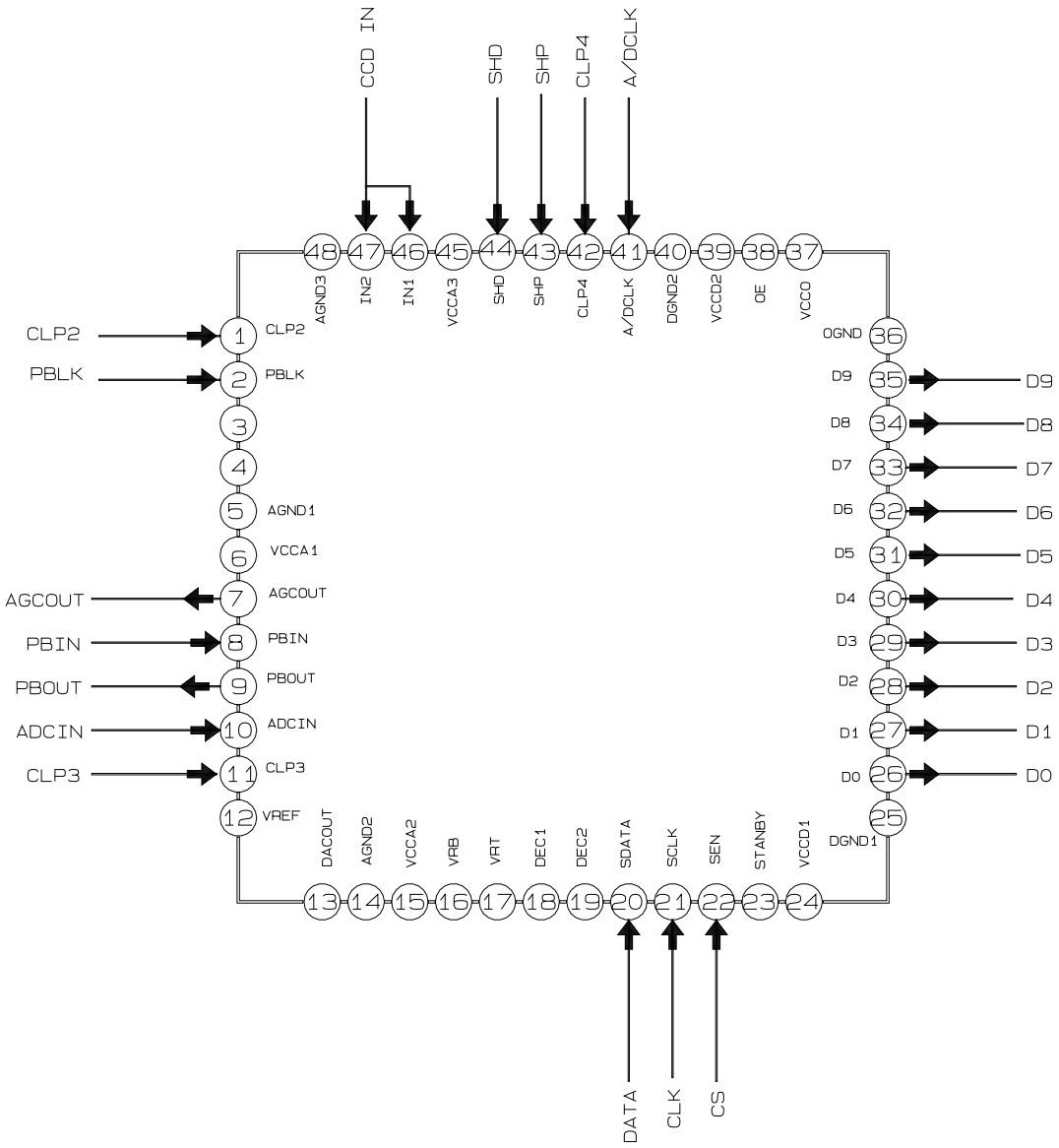
2-1-4 IC501 (KA8322)



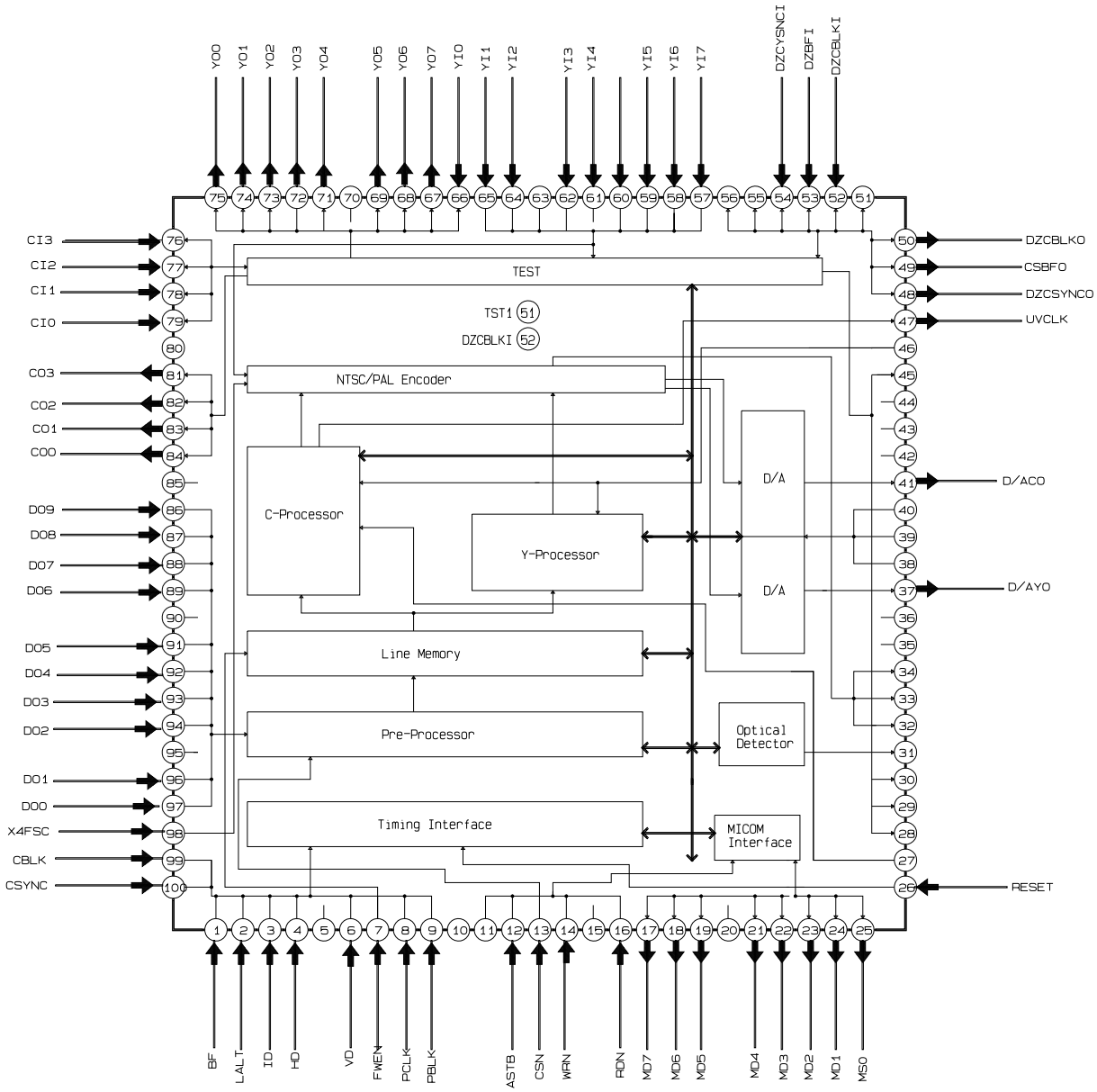
2-1-5 ICP01 (KS7213)



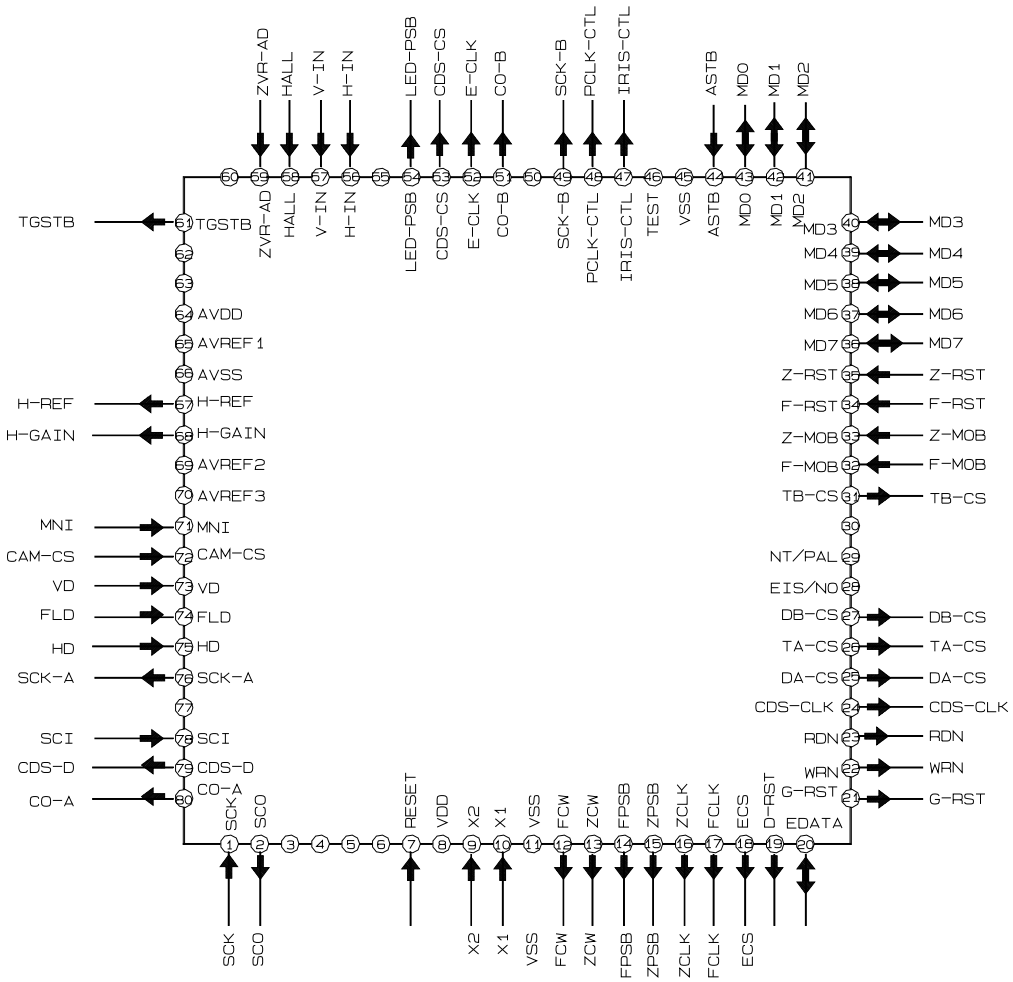
2-1-6 ICP03 (TDA8786A / AD CONVERTER)



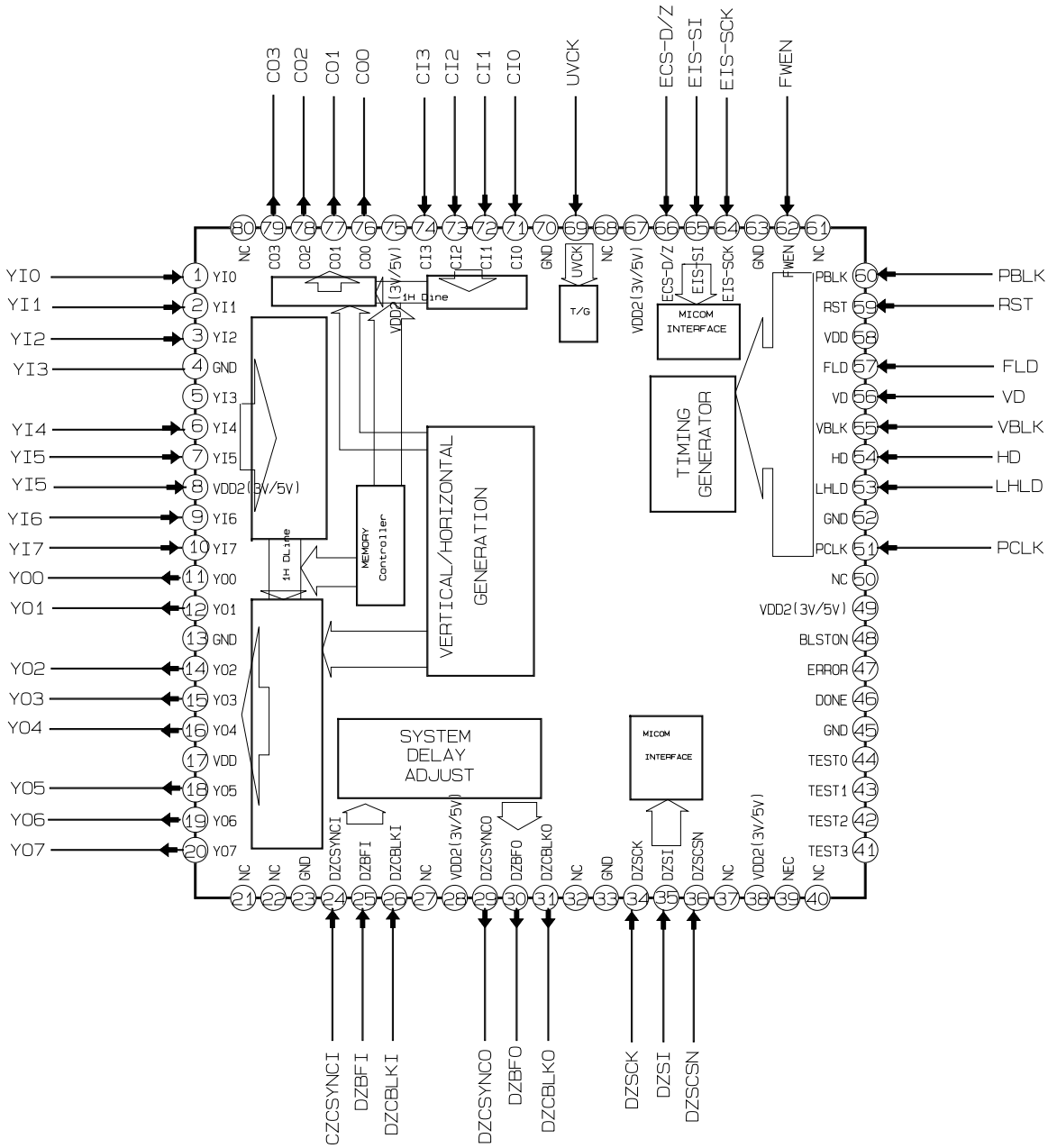
2-1-7 ICP04 (KS7306 / DSP)



2-1-8 ICP05 (UPD784035 / AF MICOM)



2-1-9 ICZ01 (KS7314 / D.ZOOM)



3. Product Specifications and Comparison Chart

3-1 Product Specifications

Design and specifications are subject to change without notice.

Operation	Description
SYSTEM	
Recording systems	Video : 2 rotary heads, helical scanning FM sytem Audio : FM system
Video signal	PAL color, EIA standard
Cassette format	8 mm
Tape speed	SP mode (Standard Play) : approx. 20.05 mm/sec.
Recording/ Playback time	SP mode (Standard Play) : 1 hour 30 minutes (P5-90)
Fast-forward/rewind time	Approx. 4 min (P5-60)
Image device	CCD (Charge Coupled Device)
Viewfinder	VP-A20/VP-A22 : Black and White electronic viewfinder VP-A23/VP-A21 : Color electronic viewfinder
Lens	VP-A23 : Combined 16x power zoom and 64x digital zoom VP-A22 : Combined 16x power zoom and 32x digital zoom VP-A20/VP-A21 : Combined 16x power zoom f=3.9 ~ 62.4 mm, F1.4 Auto wide macro
Automatic focus system	Inner
Color temperature	Auto
Lighting	300 lux (28 footcandles)
Aperture correction	Automatic with back light adjustment
INPUT/OUTPUT CONNECTORS	
Video output	Phono jack / 1Vp-p, 75 ohms, unbalanced, sync negative
Audio output	Phono jack, 7.5dBs for an output impedance of less than 2.2 Kohms
GENERAL	
Power requirement	AC power adaptor (7.5V) ; battery pack (6.0V)
Power consumption(in Camera mode)	5.2W
Tripod attachment thread	Attachment screw less than 9mm long
Microphone	Electric condensor microphone, omni-directional, monaural typ
Temperature range	Operation : 0°C to 40°C (32°F to 104°F); storage : -20°C to 60°C (-4°F to 140°F)
Dimensions/weight	Appros. 97 X 107 X 196 mm (3.8 X 4.2 X 7.7 inches) / approx. 700 g (1.54 lbs) Excluding battery pack and cassette

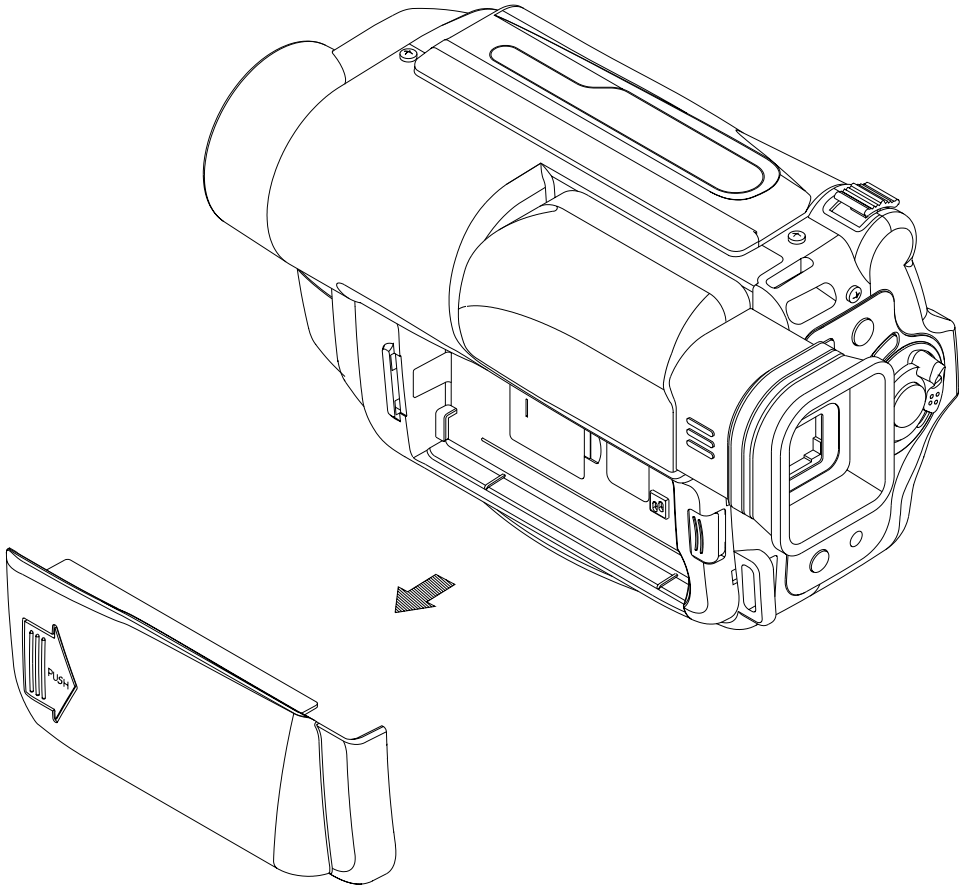
3-2 Comparison Chart

MODEL / FUNCTION	VP-A20	VP-A22	VP-A23	VP-A21
CCD	320,000	320,000	320,000	320,000
VIEWFINDER	EVF	EVF	CVF	CVF
ZOOM	X16	X32 D.ZOOM	X64 D.ZOOM	X16
STEREO	MONO	MONO	MONO	MONO
P.AE	O	O	O	O
EIS	X	O	X	X

4. Disassembly and Reassembly

4-1 Cabinet Disassembly

4-1-1 Cover Battery Removal



❶ PUSH THE COVER BATTERY AND REMOVE IT IN THE DIRECTION OF ARROW.

Fig. 4-1 Cover Battery Removal

4-1-2 Ass'y Cover Housing Removal

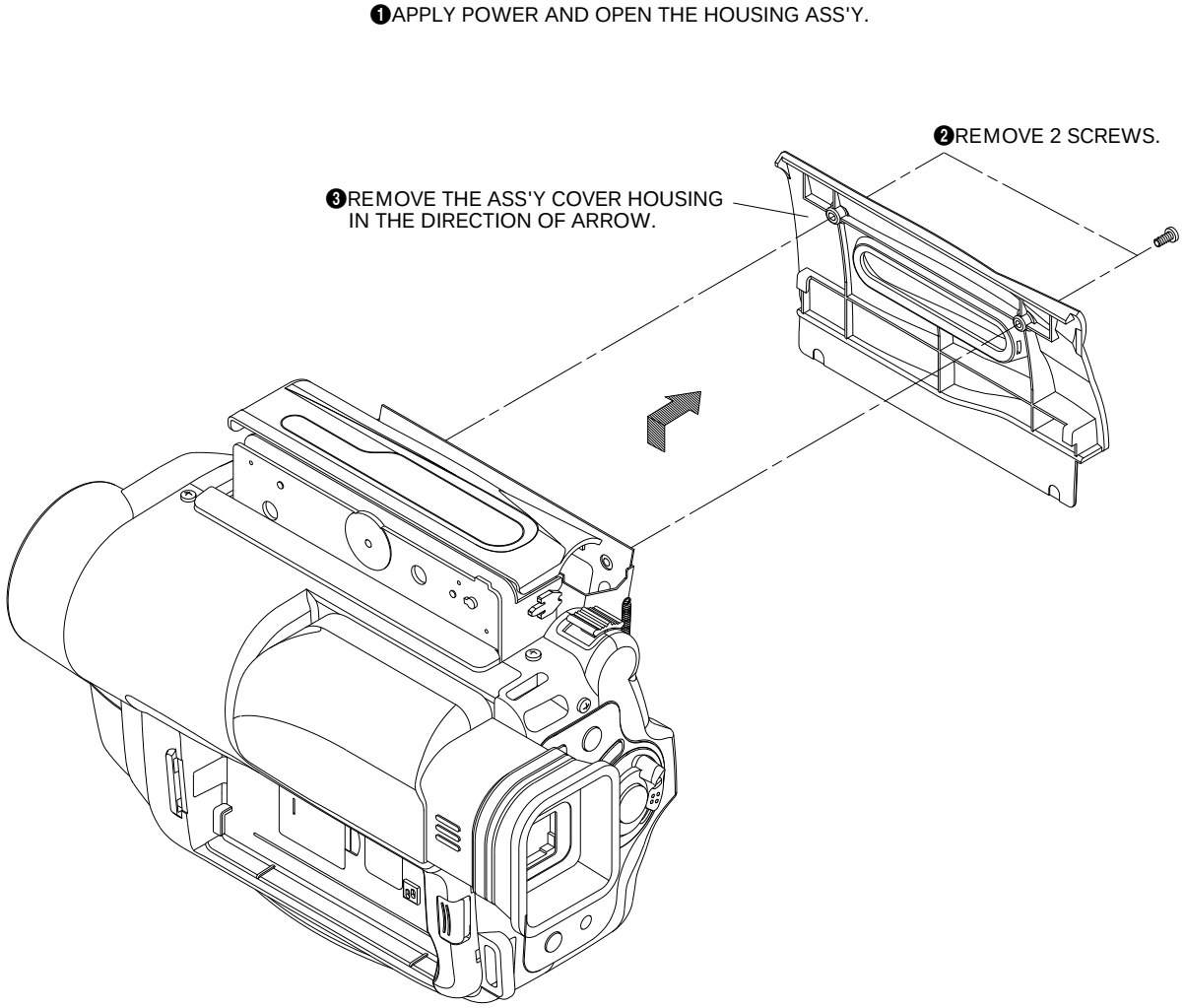


Fig. 4-2 Ass'y Cover Housing Removal

4-1-3 Ass'y Case Top Removal

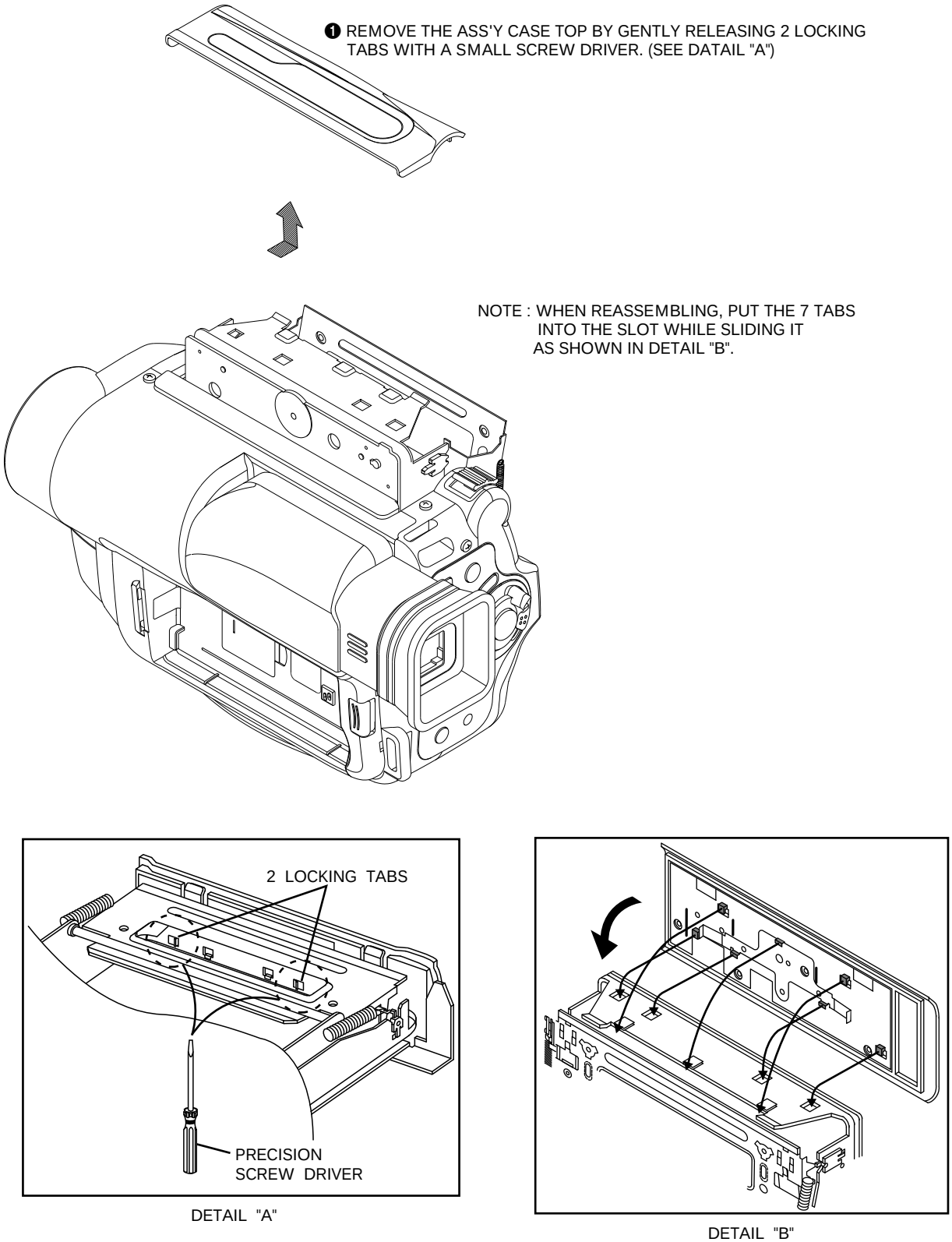

❶ REMOVE THE ASS'Y CASE TOP BY GENTLY RELEASING 2 LOCKING TABS WITH A SMALL SCREW DRIVER. (SEE DATAIL "A")
NOTE : WHEN REASSEMBLING, PUT THE 7 TABS INTO THE SLOT WHILE SLIDING IT AS SHOWN IN DETAIL "B".
2 LOCKING TABS
PRECISION SCREW DRIVER
DETAIL "A"
DETAIL "B"

Fig. 4-3 Ass'y Case Top Removal

4-1-4 Ass'y Front Removal (1)

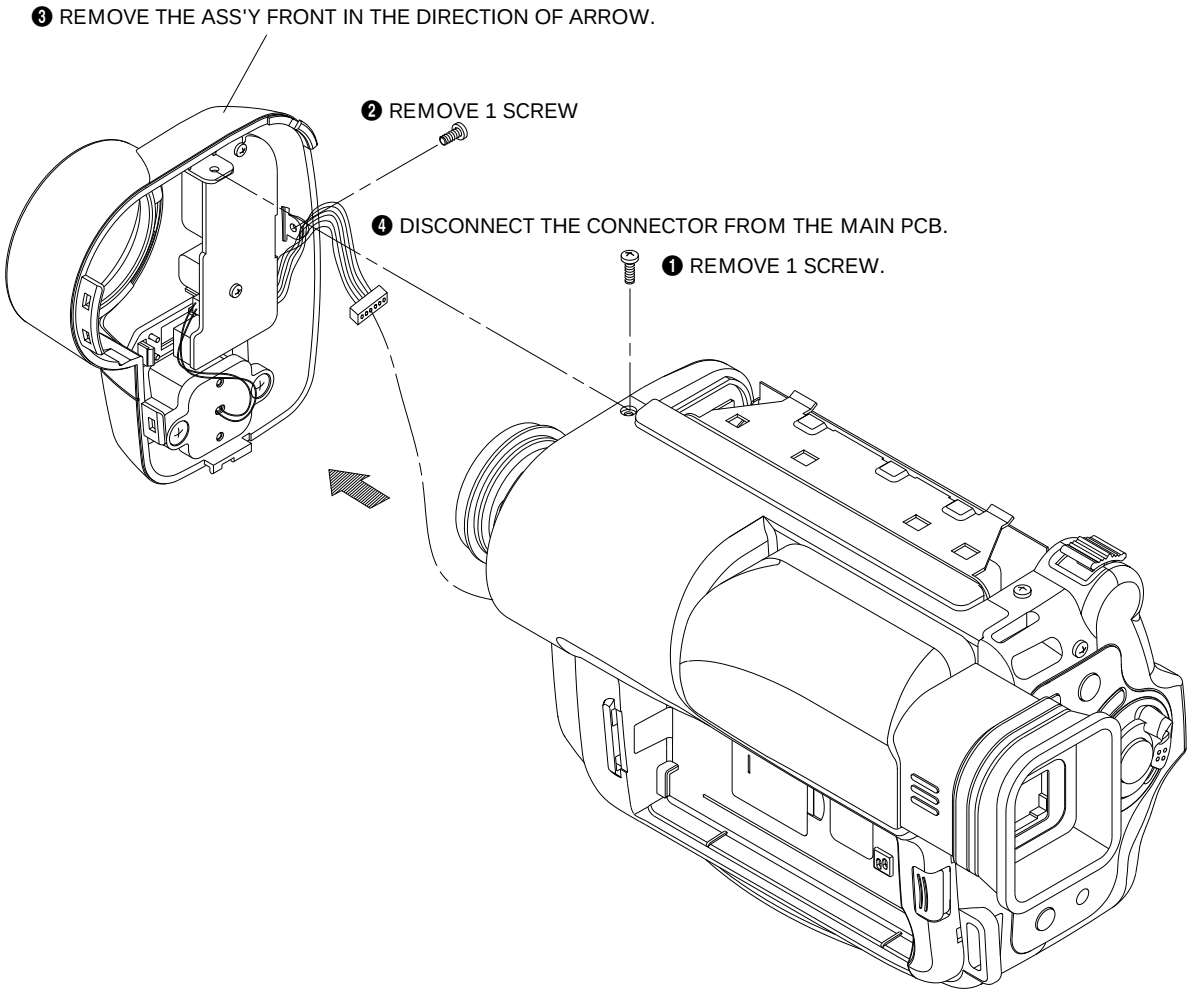

❸ REMOVE THE ASS'Y FRONT IN THE DIRECTION OF ARROW.
❷ REMOVE 1 SCREW
❹ DISCONNECT THE CONNECTOR FROM THE MAIN PCB.
❶ REMOVE 1 SCREW.

Fig. 4-4 Ass'y Front Removal (1)

4-1-5 Assy Front Removal (2)

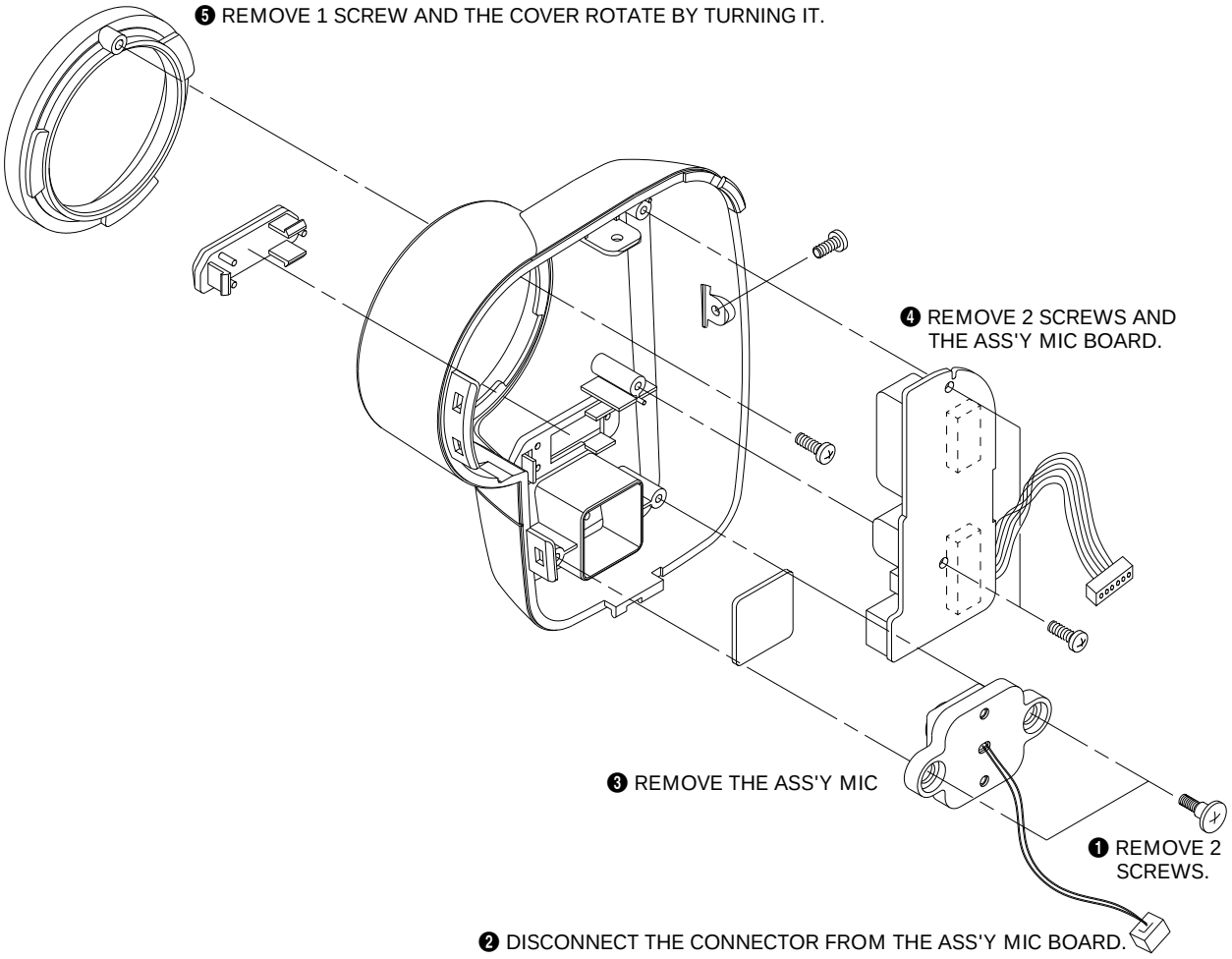

❺ REMOVE 1 SCREW AND THE COVER ROTATE BY TURNING IT.
❹ REMOVE 2 SCREWS AND THE ASS'Y MIC BOARD.
❸ REMOVE THE ASS'Y MIC
❶ REMOVE 2 SCREWS.
❷ DISCONNECT THE CONNECTOR FROM THE ASS'Y MIC BOARD.

Fig. 4-5 Assy Front Removal

4-1-6 Ass'y Case Right Removal

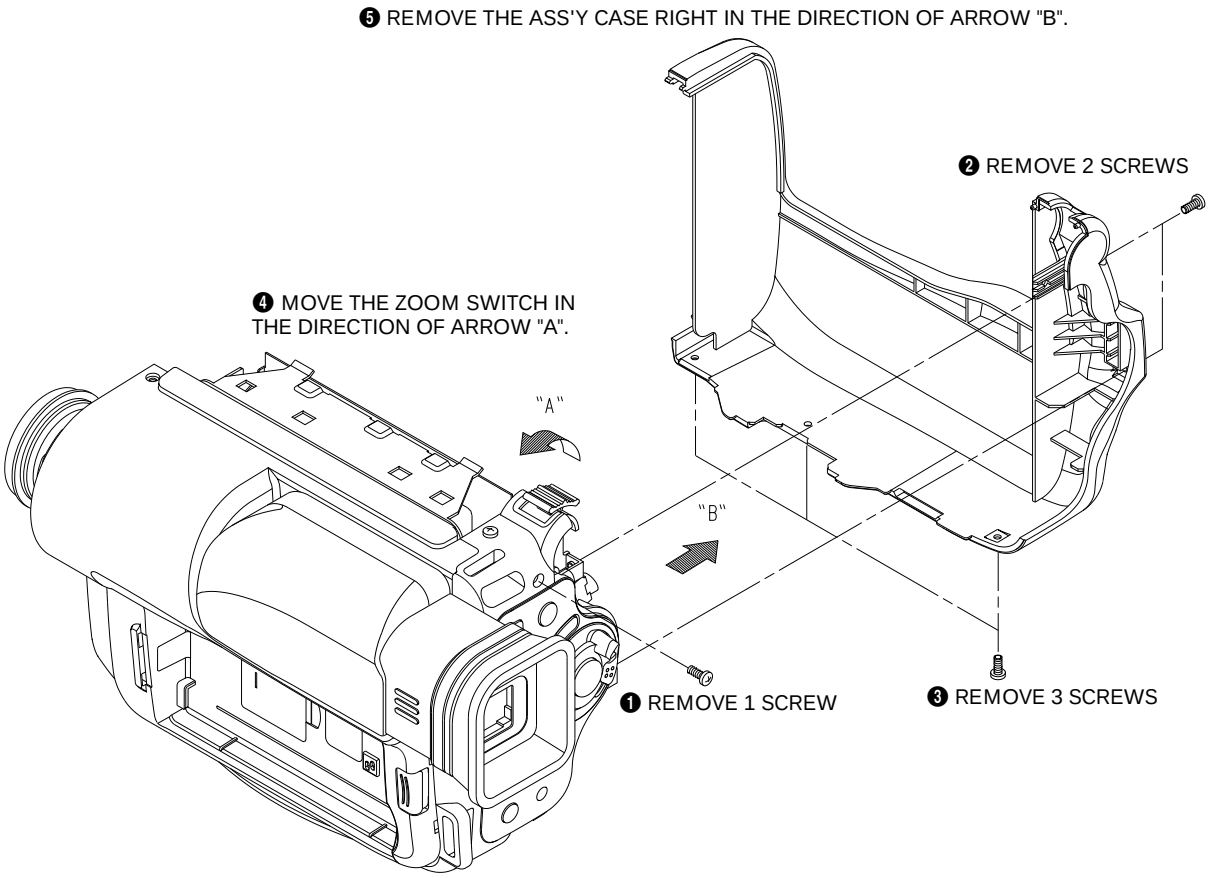

❺ REMOVE THE ASS'Y CASE RIGHT IN THE DIRECTION OF ARROW "B".
❷ REMOVE 2 SCREWS
❹ MOVE THE ZOOM SWITCH IN THE DIRECTION OF ARROW "A".
"A"
"B"
❶ REMOVE 1 SCREW
❸ REMOVE 3 SCREWS

Fig. 4-6 Ass'y Case Right Removal (1)

4-1-7 Ass'y Case Left Removal (1)

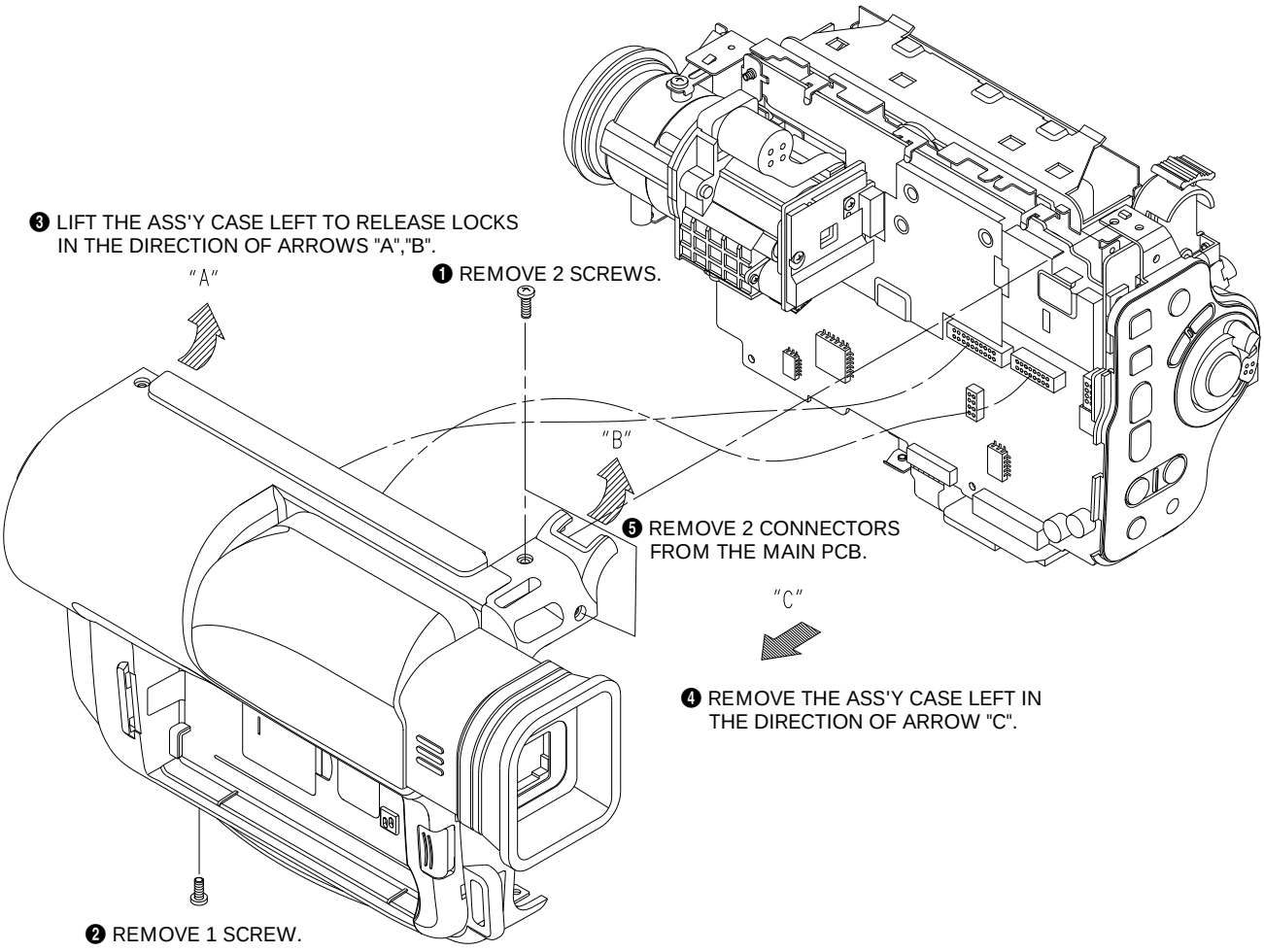

❸ LIFT THE ASS'Y CASE LEFT TO RELEASE LOCKS IN THE DIRECTION OF ARROWS "A","B".
"A"
❶ REMOVE 2 SCREWS.
"B"
❺ REMOVE 2 CONNECTORS FROM THE MAIN PCB.
"C"
❹ REMOVE THE ASS'Y CASE LEFT IN THE DIRECTION OF ARROW "C".
❷ REMOVE 1 SCREW.

Fig. 4-7 Ass'y Case Left Removal (1)

4-1-8 Ass'y Case Left Removal (2)

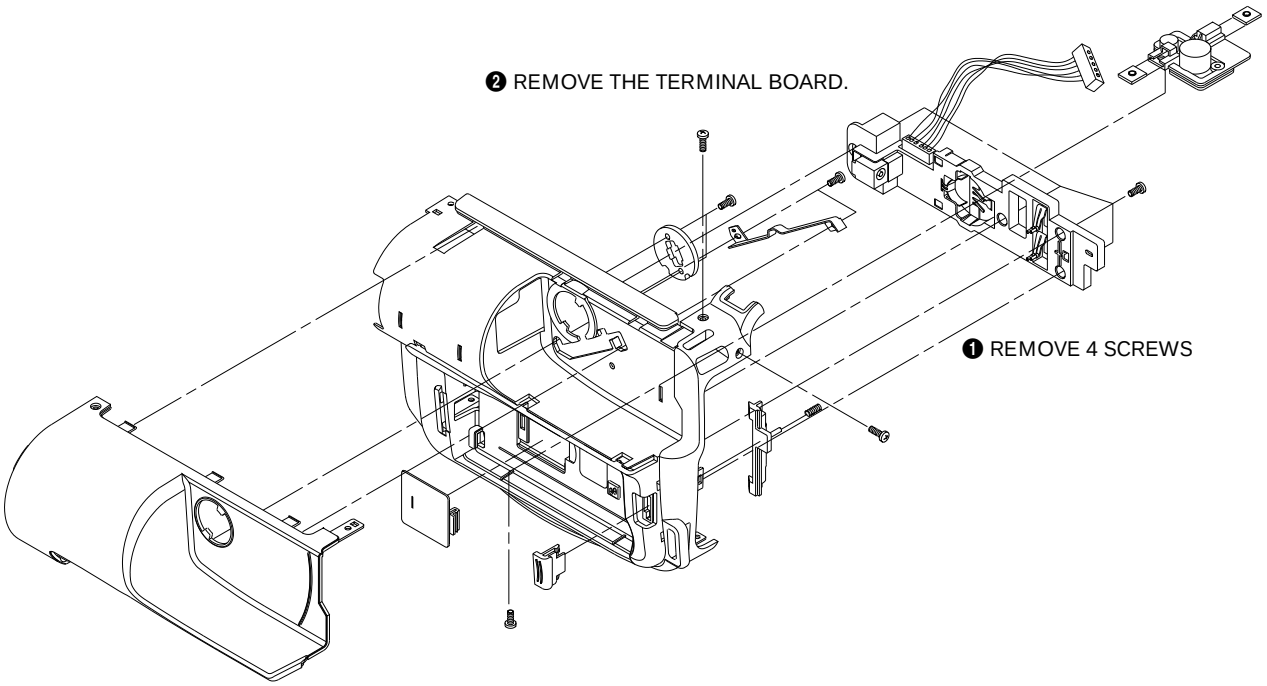


Fig. 4-8 Ass'y Case Left Removal (2)

4-1-9 Ass'y Rear Board Removal (1)

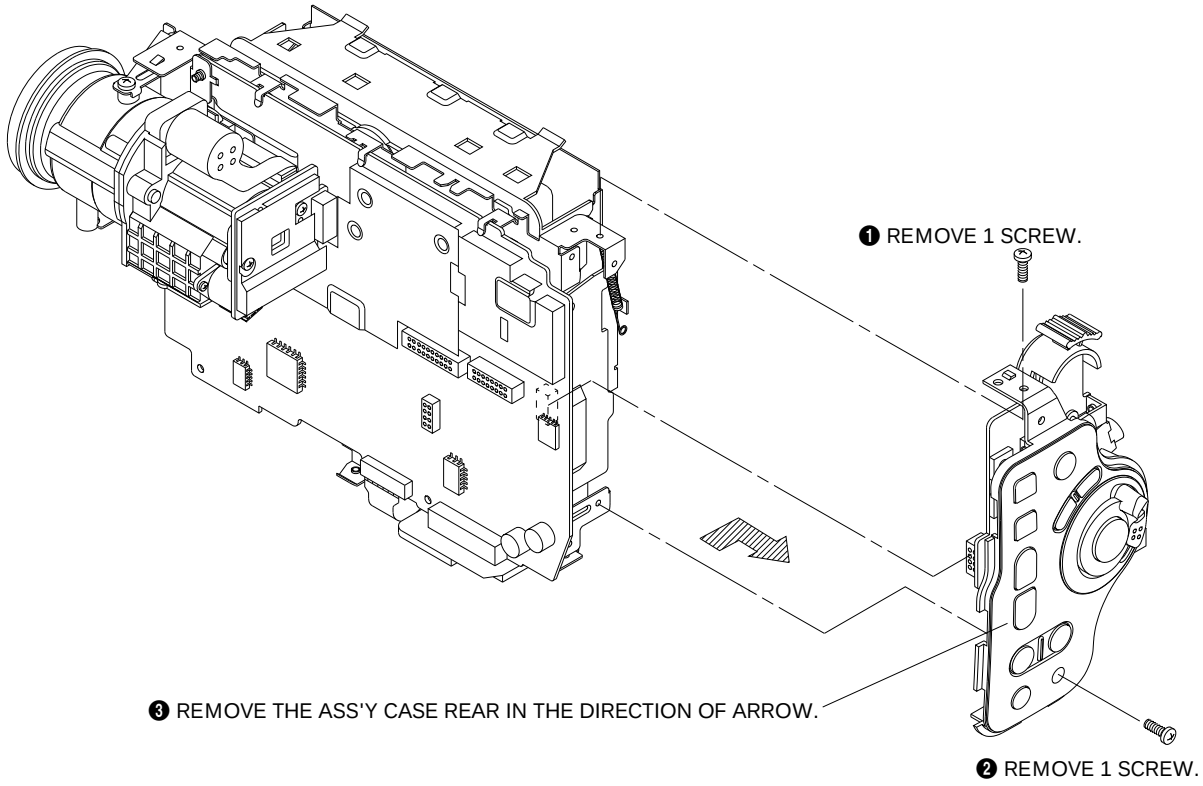


Fig. 4-9 Ass'y Rear Board Removal (1)

4-1-10 Ass'y Rear Board Removal (2)

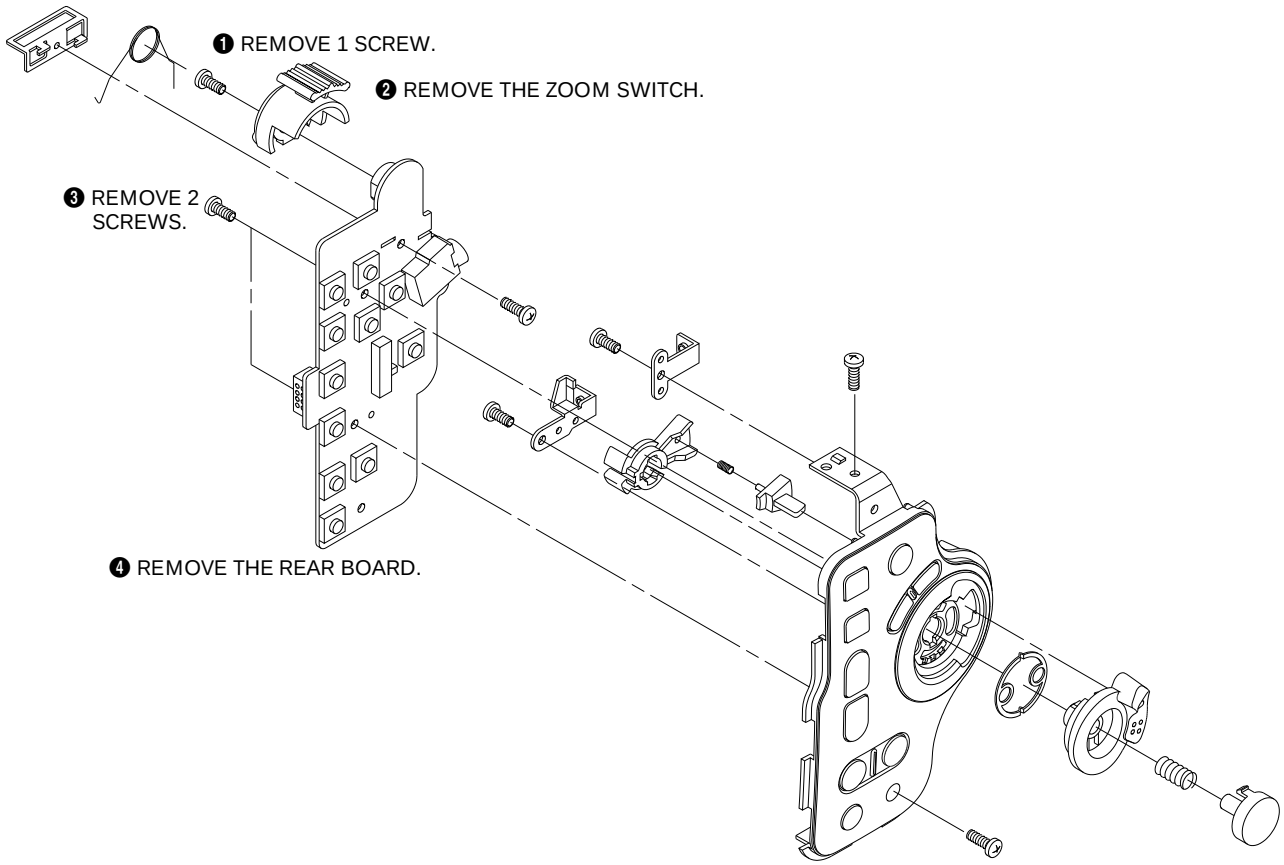


Fig. 4-10 Ass'y Rear Board Removal (2)

4-1-11 Ass'y Main Board and Ass'y Deck Removal

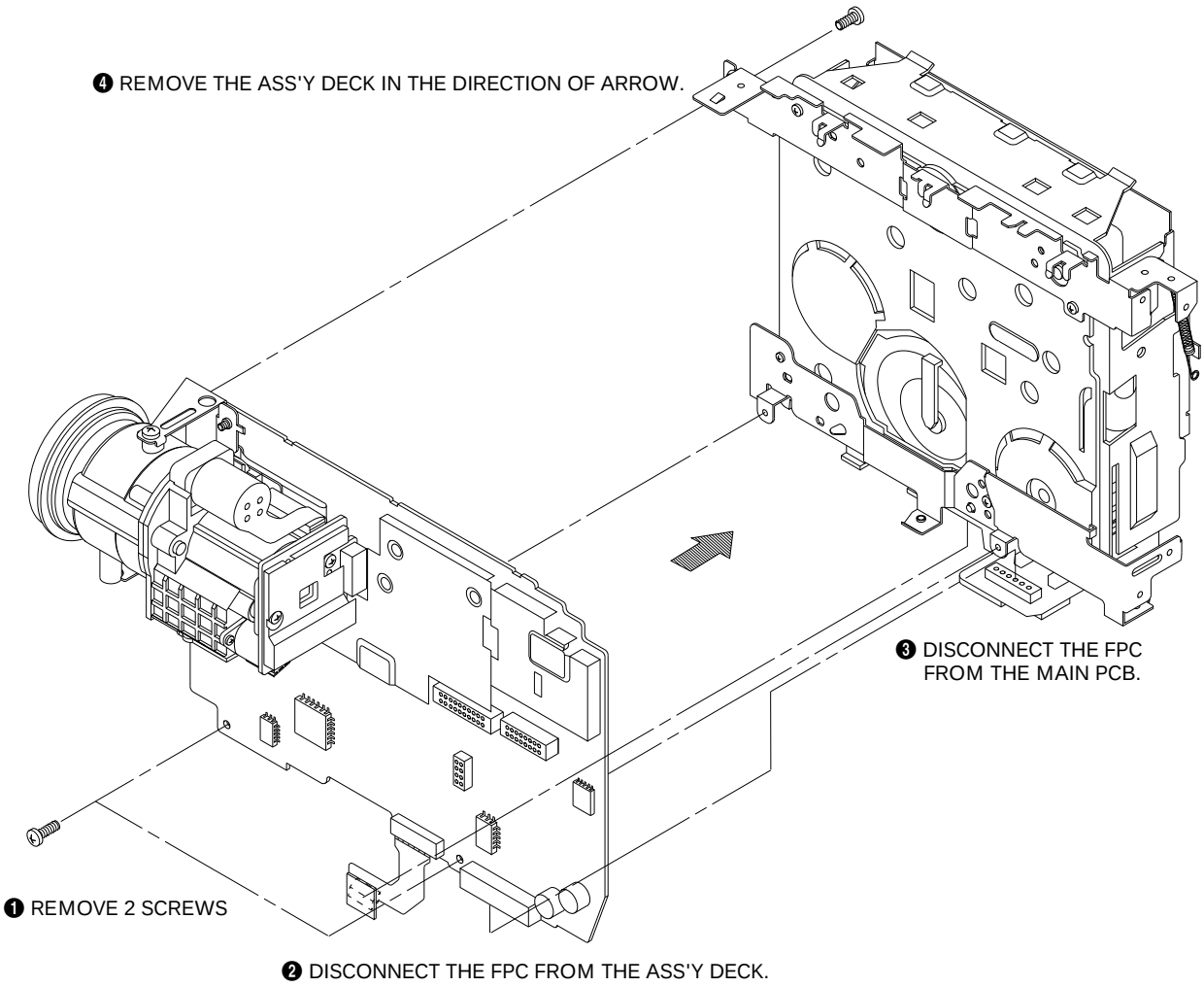

❹ REMOVE THE ASS'Y DECK IN THE DIRECTION OF ARROW.
❸ DISCONNECT THE FPC FROM THE MAIN PCB.
❶ REMOVE 2 SCREWS
❷ DISCONNECT THE FPC FROM THE ASS'Y DECK.

Fig. 4-11 Ass'y Main Board and Ass'y Deck Removal

4-1-12 Ass'y Camera Removal (1)

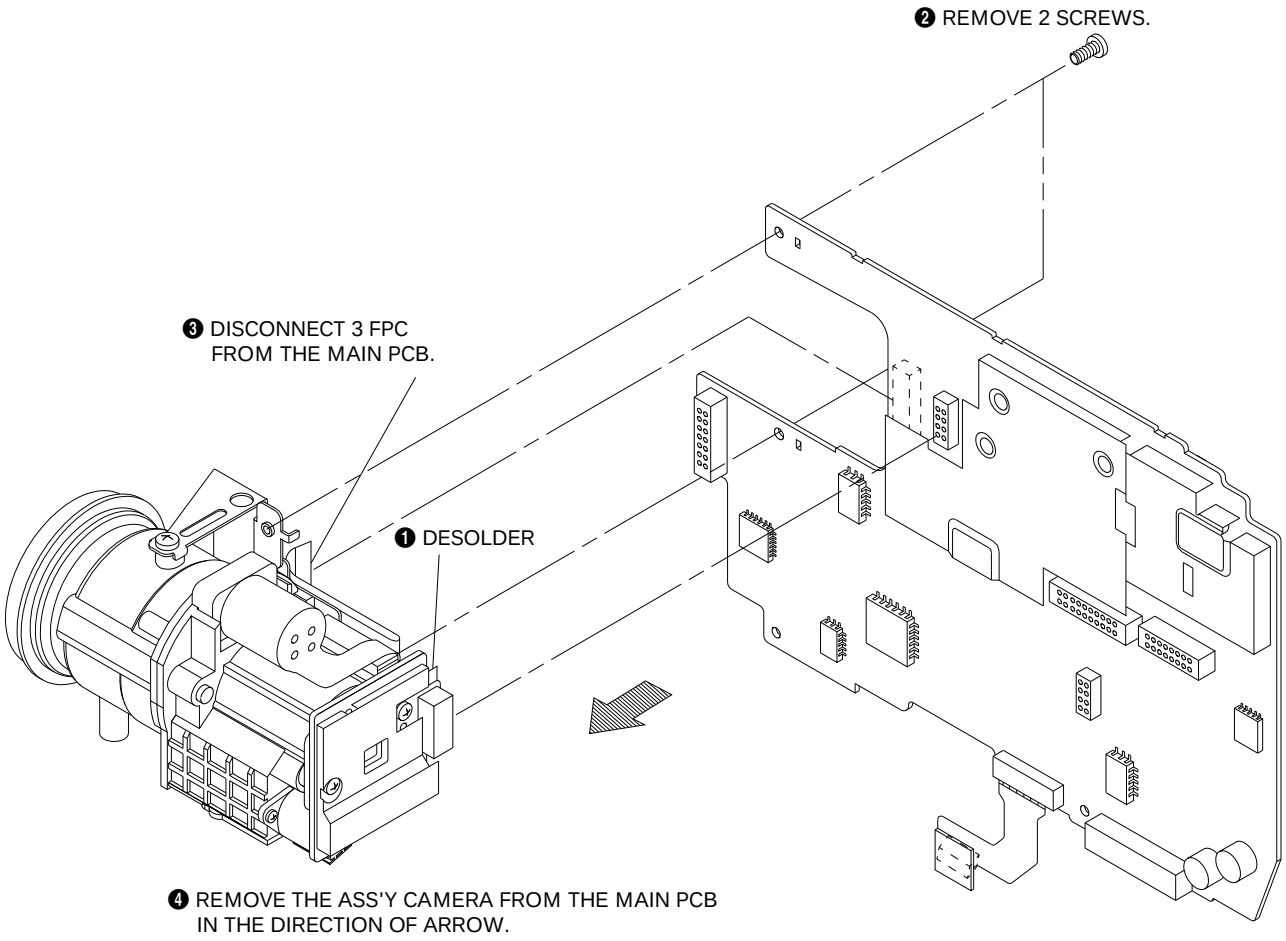

❷ REMOVE 2 SCREWS.
❸ DISCONNECT 3 FPC
FROM THE MAIN PCB.
❶ DESOLDER
❹ REMOVE THE ASS'Y CAMERA FROM THE MAIN PCB
IN THE DIRECTION OF ARROW.

Fig. 4-12 Ass'y Camera Removal (1)

4-1-13 Ass'y Camera Removal (2)

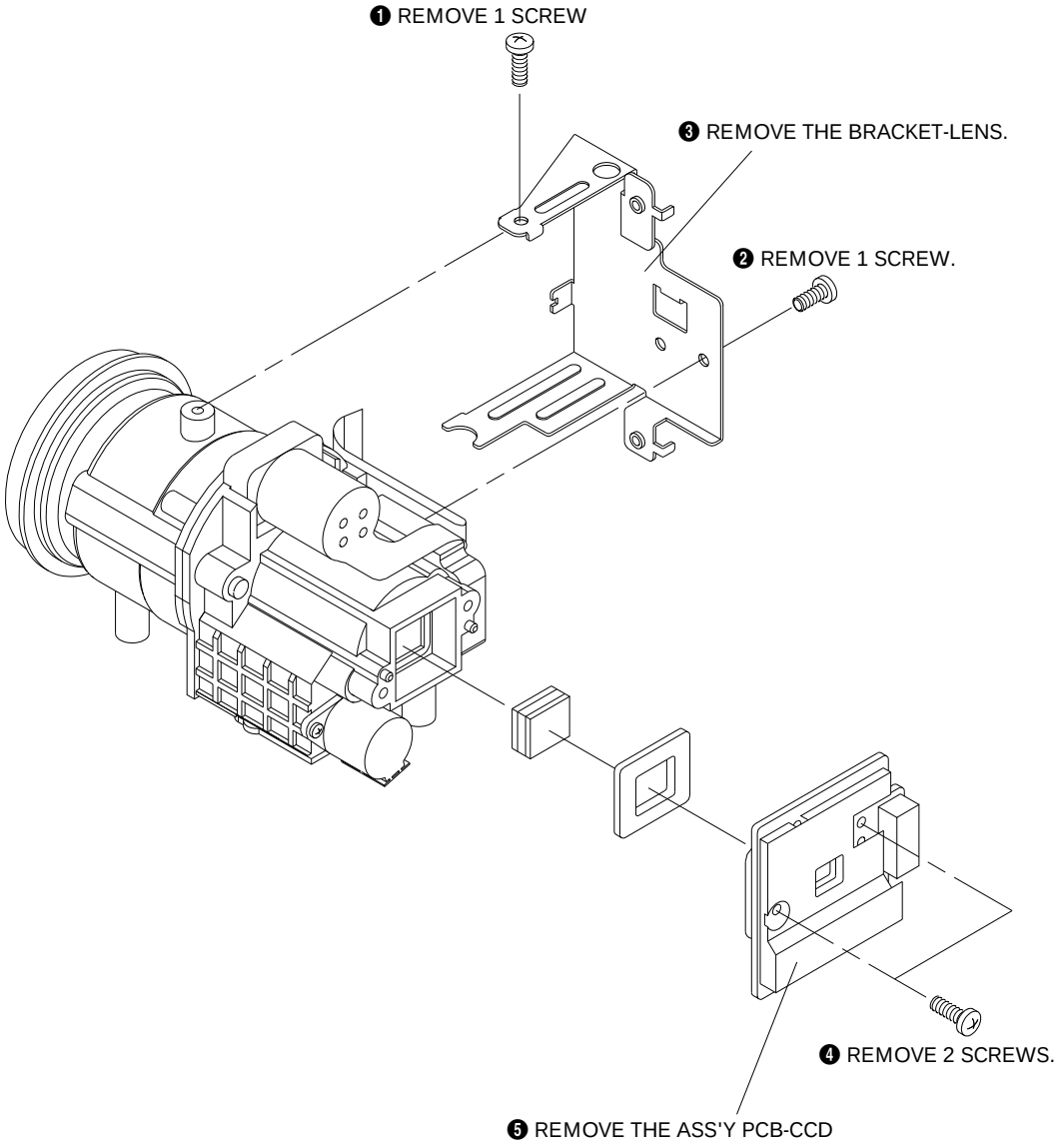


Fig. 4-13 Ass'y Camera Removal (2)

4-1-14 Ass'y EVF/CVF Removal

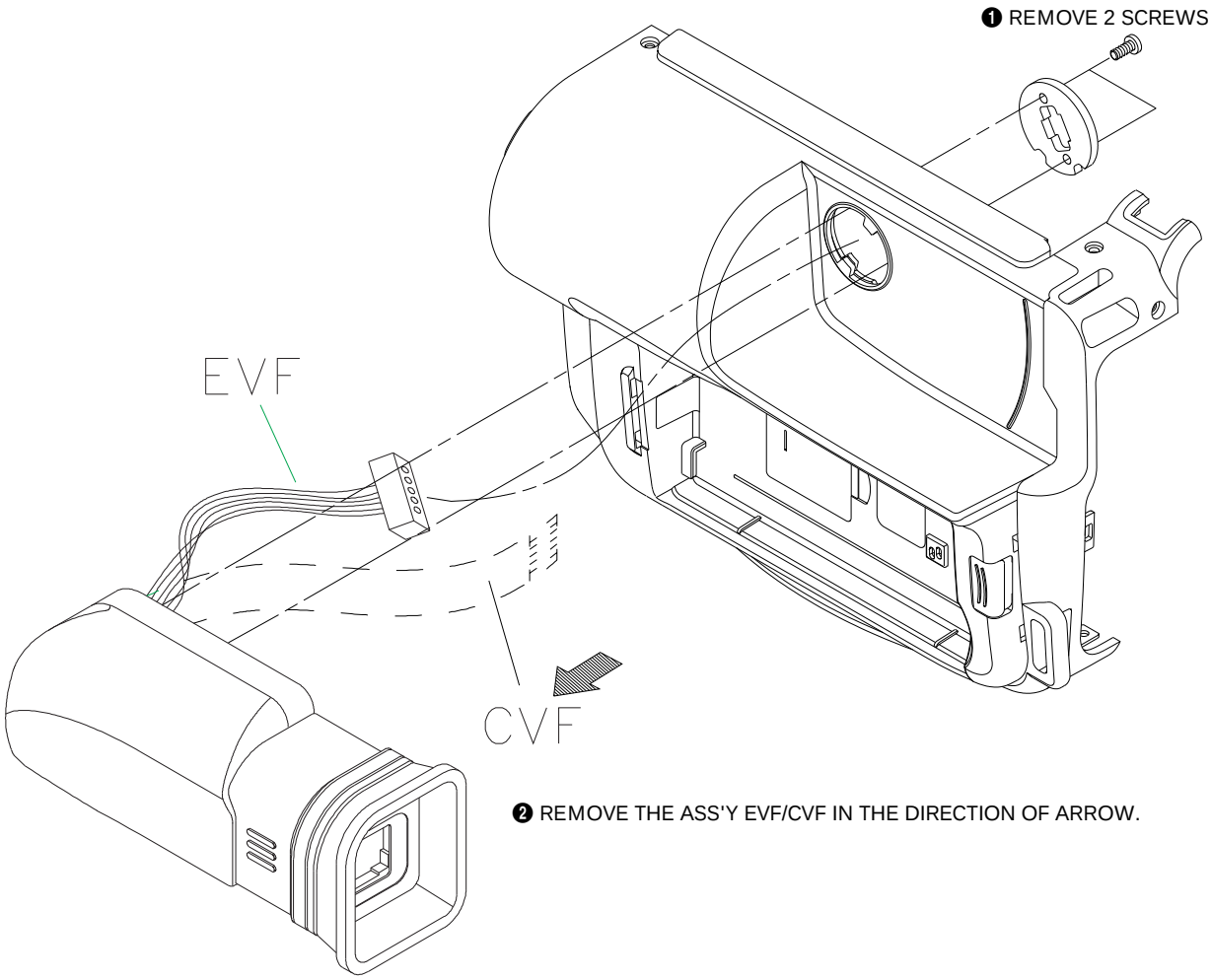


Fig. 4-14 Ass'y EVF/CVF Removal

4-2 Circuit Boards Location

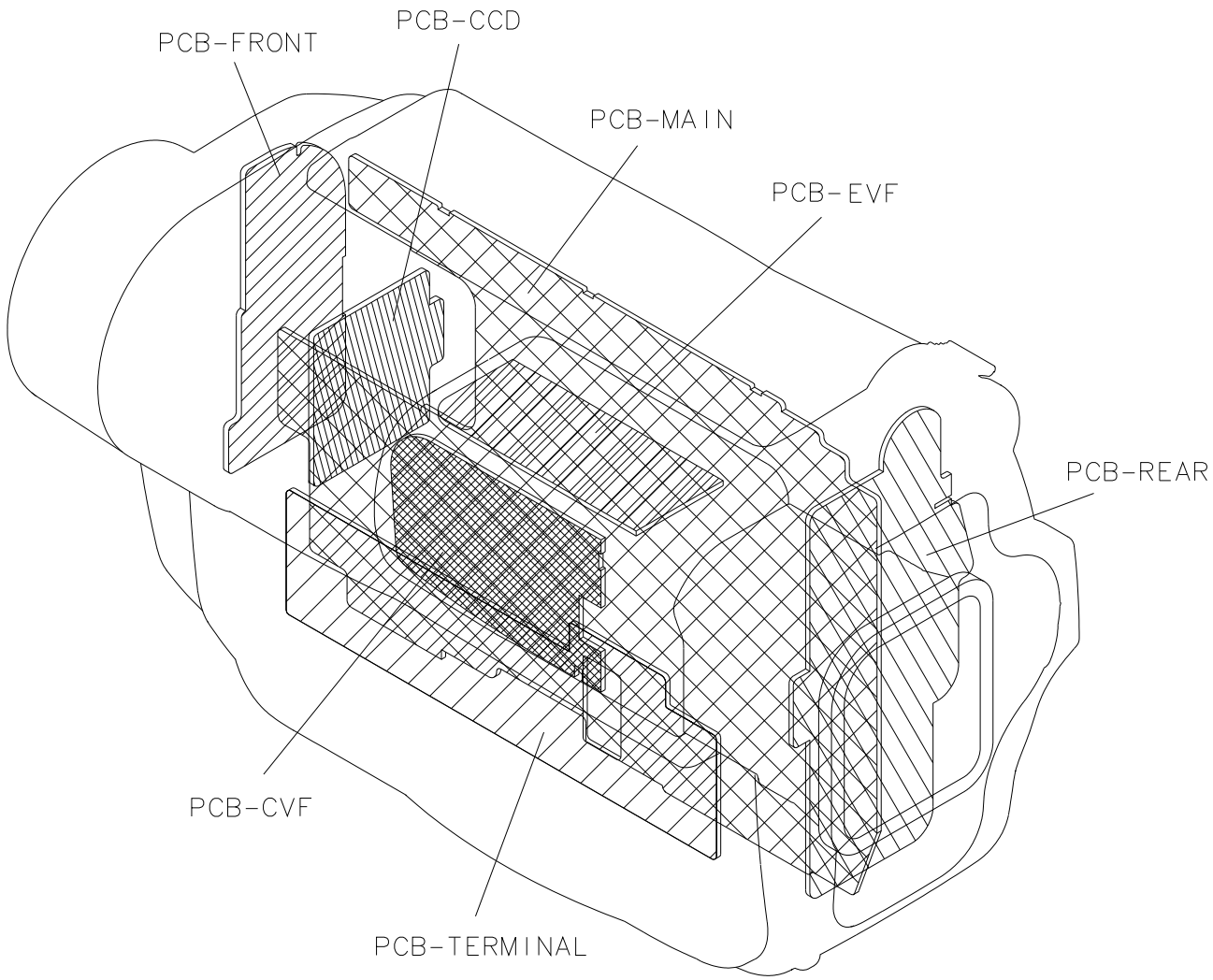
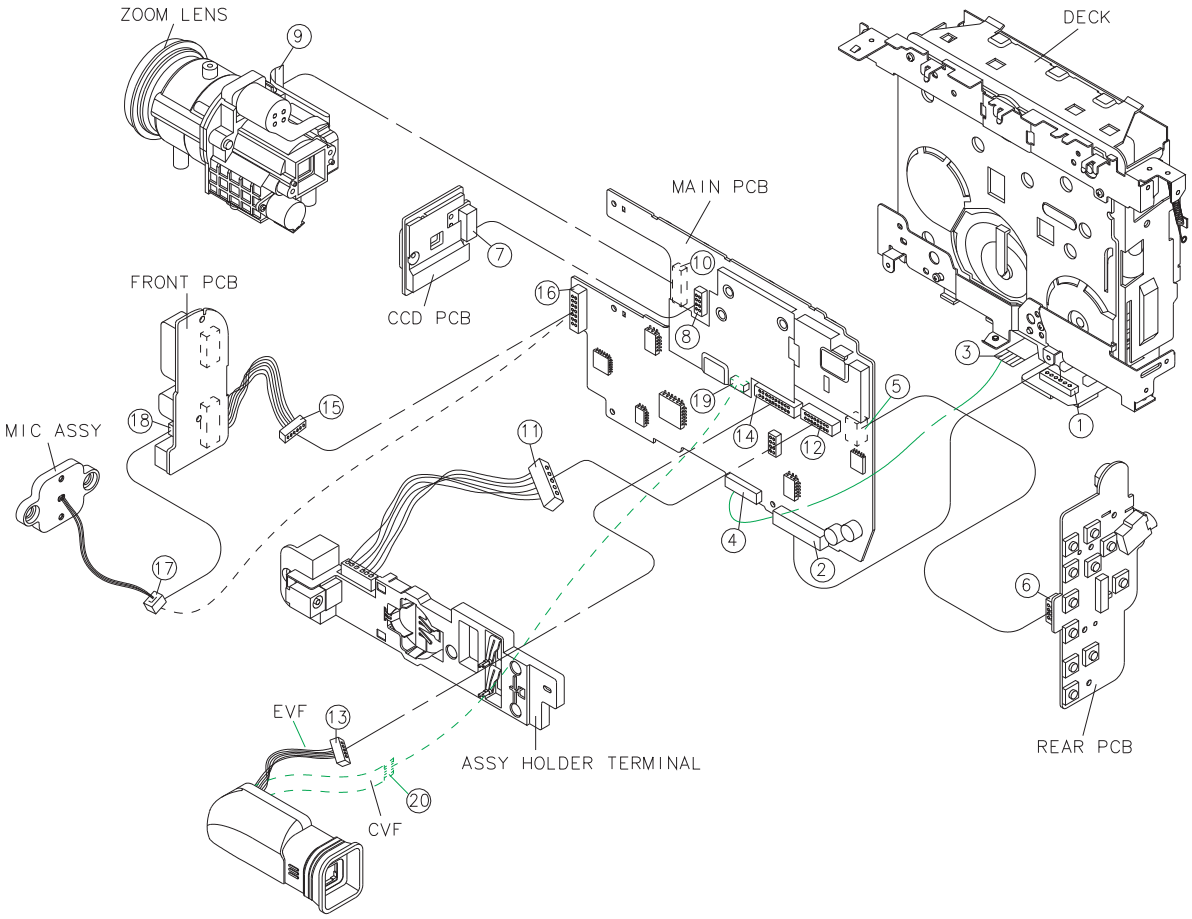


Fig. 4-15 Circuit Boards Location

4-3 Connector Diagrams

4-3-1 Diagram(1)



NO	CONN.WAFER	DIRECTION LOCA-NO	CONN.WAFER LOCA-NO	NO.
1	W501	DECK ◄► MAIN PCB	CN501	2
3	W502	DECK ◄► MAIN PCB	CN101	4
5	CN601	MAIN PCB ◄► REAR PCB	CN851	6
7	CNC01	CCD PCB ◄► MAIN PCB	CNP01	8
9	---	LENS FPC ◄► MAIN PCB	CNP02	10
11	CN001	TERMINAL PCB ◄► MAIN PCB	CN901	12
13	CNE01	EVF ◄► MAIN PCB	CN602	14
20	CNE01	CVF ◄► MAIN PCB	CN603	19
15	CN801	FRONT PCB ◄► MAIN PCB	CN851	16
17	---	MIC ASSY ◄►FRONT PCB	CN802	18
17	---	MIC ASSY ◄► MAIN PCB	CNP03	16

Fig. 4-16 Circuit Boards Location

5. Alignment and Adjustment

5-1 Mechanical Adjustment

1. Refer to mechanical manual "DE-6 (AD68-30200A)" for the adjustment and checks of mechanism section.
2. Short between pin 67 of IC601 and GND in order to set the TEST mode (Track Shift Mode).
3. The location of test point (See Fig.1)

Test Point :
PB RF - Pin 11 of CTP501
Head Switching Trigger - Pin 9 of CTP501

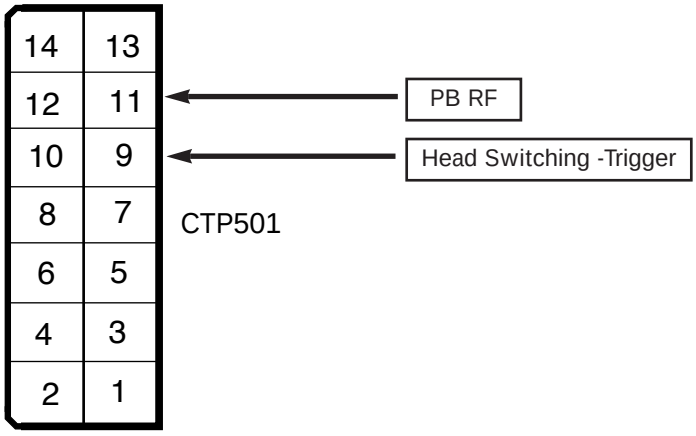
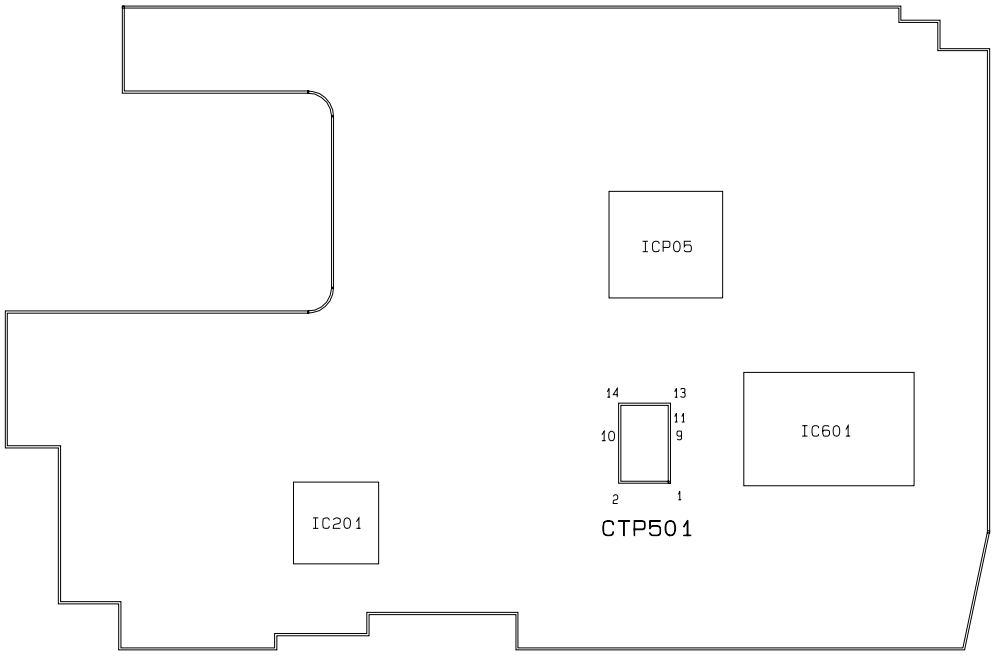


Fig. 1 Test point

4. After completing the adjustment, open the pin 67 of IC601 and GND to release the TEST mode.



Main PCB (Component side)

Fig. 2 The location of test point

5-2 Camera Section Adjustment

Note :

1. This system has
   1) EEPROM to store the confirmed adjustment data.
   2) DSP (Digital Signal Process ; ICP04 - Main board) chip to process the signal of camera parts.
   3) One test point for the frequency adjustment of DSP main clock (P. CLK).

2. Keep in mind
   1) Readjustment is needed when the EEPROM (ICP10 of Main board) is replaced.
      The reason is that EEPROM stores confirmed adjustment value of each adjustment step.

5-2-1 Preparations

1. Equipments to be used

1) DC Power supply
2) Oscilloscope
3) Frequency counter
4) Vectorscope
5) Waveform monitor
6) Color monitor or TV
7) Various charts
   - Color bar chart
   - Gray-scale chart, etc...
8) Alignment tape (Lion pattern)

2. Composition of camera P.C.Boards

1) Main PCB 2) CCD PCB
3) EVF PCB 4) CVF PCB

3. Adjustment preparations

1) Press the confirm button when each manual adjustment step is completed to write the adjustment data to the EEPROM.
2) After each adjustment step is completed, OSD shows “OK!”.
3) To cancel the adjustment mode, remove the power source.

4. Rear Board

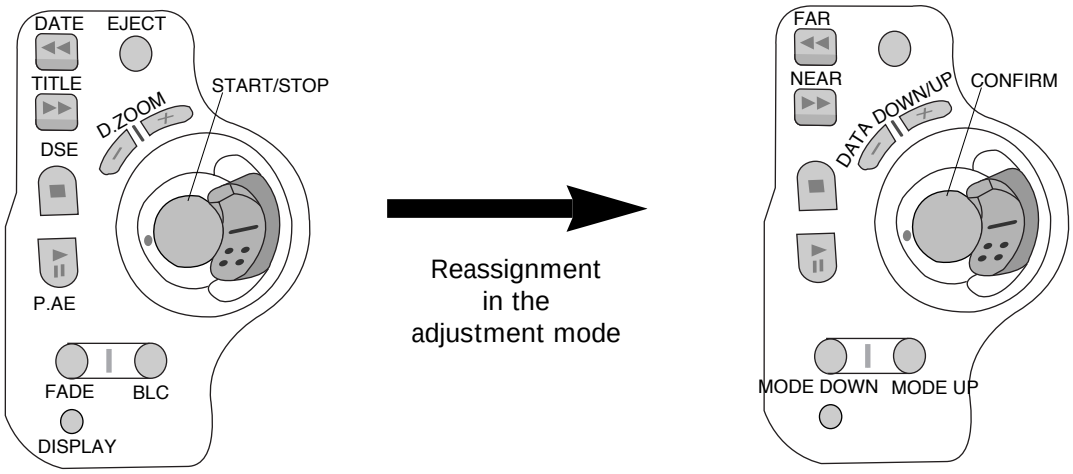
The following is a chart explaining the use of each button :

Using Button	Adjustment
START/STOP(CONFIRM)	Data store after finishing adjustment by DATA UP/DOWN button.
- (DATA DOWN) + (DATA UP)	When changing data value of adjust state.
BLC (MODE UP) FADE (MODE DOWN)	Mode change.
DATE (FAR) TITLE (NEAR)	Focus adjustment.

The function buttons on the Rear Board are used to control the camcorder additionally,
These buttons should be used for adjustment of the camera section.

Rear Board for camcorder adjustment

Figure of button placement when Rear Board is used for service adjustment.



Note : In service adjustment mode, button names are different from those in customer camera function control mode. EX) Start/stop button is the same as confirm.

5. How to get into service "**ADJUST**" mode

STEP 1

1. Remove the lithium battery from the camcorder.
2. Connect the power source (battery/ DC cable).
3. Eject the tape if it is in the unit.
4. Set the power switch of the camcorder to "CAMERA" position.
5. Set OSD on state.

STEP 2

1. PRESS "DSE" Button 3 times on the camcorder.
2. It goes to into "NEGATIVE" mode.
3. Press and hold the "EJECT" button and "DISPLAY" button on the camcorder at the same time for more than 3 seconds. Then unit goes into service mode.

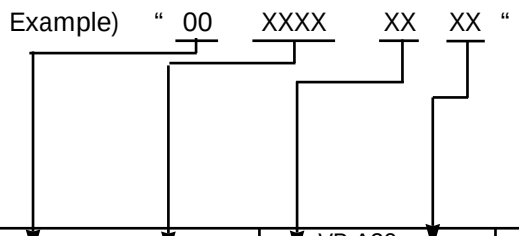
OSD → NEGATIVE

STEP 3

On screen display show "CD HALLA XX XX" CAMERA ADJUSTMENT mode has successfully been activated.

Note : When "XX XX" is shown in service adjustment precedures, this indicates variable values.

5. Initial data of camera parts adjustment - **CAMERA AF 1st MICOM (UPD784035GC-817) DATA**
During camera adjustment, the OSD displays the following abbreviations to indicate the selected mode.



Note : "Data 1" is previous setting in memory, "Data 2" is now adjustment setting, that changes during adjustment mode. After pressing "START/STOP (Confirm)", it goes to memory.

		VP-A20		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
CD	HALLA	70	70	70	70	HALL AUTO ADJUSTMENT
CE	IRISA	D0	D0	D0	D0	IRIS CONTROL RANGE ADJUSTMENT
CF	WBA	FF	FF	FF	FF	WHITE BALANCE AUTO ADJUSTMENT
D0	LENSA	FF	FF	FF	FF	LENS AUTO ADJUSTMENT
D6	Z.CHK	80	80	80	80	ZOOM VR CENTER AUTO ADJUSTMENT
O3	IRIS1	70	70	70	70	IRIS LEVEL CONTROL-HIGH BYTE
O5	P.CLK	40	40	40	40	P.CLK ADJUSTMENT
O7	ADREF	OO	OO	OO	OO	A/D REFERENCE CONTROL(SETUP)
O8	S.CLP	O8	O8	O8	O8	SOFT CLIP CONTROL
O9	AGC1	18	18	18	18	AGC CONTROL
OB	HAPER	5A	5A	5A	5A	HORIZONTAL APPERTURE GAIN
OC	YSEL	FA	FA	FA	FA	VERTICAL APPERTURE GAIN
1C	CWBR	3D	3D	3D	3D	COLOR W/B COEFF. OF Cr SIGNAL
1D	CWBB	90	90	90	90	COLOR W/B COEFF. OF Cb SIGNAL
32	CRGP	47	47	47	47	INDOOR R-Y POSITIVE GAIN
33	CRGN	55	55	55	55	INDOOR R-Y NEGATIVE GAIN
34	CHYE	O5	O5	O5	O5	INDOOR R-Y POSITIVE HUE
35	CHB	1O	1O	1O	1O	INDOOR R-Y NEGATIVE HUE
36	CBGP	28	28	28	28	INDOOR B-Y POSITIVE GAIN
37	CBGN	20	20	20	20	INDOOR B-Y NEGATIVE GAIN
38	CHGR	29	29	29	29	INDOOR B-Y POSITIVE HUE
39	PCBHN	O9	O9	O9	O9	INDOOR B-Y NEGATIVE HUE
53	ECGAN	88	88	88	88	CHROMA GAIN CONTROL
54	ESY	84	84	84	84	Y SET-UP LEVEL CONTROL
55	EWC	D0	D0	D0	D0	WHITE CLIP CONTROL
57	EUSC	EF	EF	EF	EF	B-Y SIGNAL BURST LEVEL CONTROL
58	EVSC	12	12	12	12	R-Y SIGNAL BURST LEVEL CONTROL
5D	XKCON	O4	O4	O4	O4	SCK CONTROL
5E	MDSEL	O4	O4	O5	O5	D/ZOOM MODE SELECTION
5F	TGMSE	O2	O2	O2	O2	TG MODE SELECTION
65	HRGDL	OE	OE	OE	OE	H1/H2/RG DELAY CONTROL
66	SHP.D	C7	C7	C7	C7	SHP/SHD DELAY CONTROL
67	ADDL	OO	OO	OO	OO	SPO/FECKDELAY CONTROL
71	ROUGP	43	43	43	43	OUTDOOR R-Y POSITIVE GAIN
72	ROUGN	3C	3C	3C	3C	OUTDOOR R-Y NEGATIVE GAIN
73	CHOYE	O1	O1	O1	O1	OUTDOOR R-Y POSITIVE HUE
74	CHOB	1B	1B	1B	1B	OUTDOOR R-Y NEGATIVE HUE
75	GOUGP	2C	2C	2C	2C	OUTDOOR B-Y POSITIVE GAIN
76	BOUGN	25	25	25	25	OUTDOOR B-Y NEGATIVE GAIN
77	CHOGR	1C	1C	1C	1C	OUTDOOR B-Y POSITIVE HUE
78	CHOR	OC	OC	OC	OC	OUTDOOR B-Y NEGATIVE HUE
82	AETAL	A0	A0	A0	A0	AE TARGET (LOW BYTE)
83	AETAH	O5	O5	O5	O5	AE TARGET (HIGH BYTE)
88	AGCMA	85	85	85	85	AGC MAXIMUM CONTROL
8F	WBTAR	86	86	86	86	WHITE BALANCE R TARGET
90	WBTAB	74	74	74	74	WHITE BALANCE B TARGET
95	R-IN	45	45	45	45	R INDOOR CONTROL VALUE
96	B-IN	A0	A0	A0	A0	B INDOOR CONTROL VALUE
97	R-OUT	80	80	80	80	R OUTDOOR CONTROL VALUE

		VP-A20		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
98	B-OUT	68	68	68	68	B OUTDOOR CONTROL VALUE
B8	CFAPS	20	20	20	20	NOISE SLICE START AGC
B9	APNSC	FE	FE	FE	FE	NOISE SLICE MAXIMUM VALUE
BB	CFAOR	O3	O3	O3	O3	CHROMA SUPRESS MAXIMUM VALUE
BC	BLKST	30	30	30	30	EY BLACK START AGC
BD	BLKMX	O4	O4	O4	O4	EY BLACK MAXIMUM VALUE
00		OO	OO	OO	OO	NOT USED
01		40	40	40	40	HALL GAIN
02		80	80	80	80	HALL REFERENCE
04		OO	OO	OO	OO	IRIS LEVEL CONTROL-L
06		OO	OO	OO	OO	P.CLK PWM CONTROL-L
OA		66	66	66	66	H/V BLACK NOIS THRESHOLD/GAIN
0D		13	13	13	13	APERTURE SLICE CONTROL
OE		A8	A8	A8	A8	Y HI-REF. VALUE FOR C SUPRESS
OF		10	10	10	10	EDGE REF. VALUE FOR C SUPRESS
10		05	05	05	05	Y SIGNAL GAMMA COEFF. 1
11		0A	0A	0A	0A	Y SIGNAL GAMMA COEFF. 2
12		1C	1C	1C	1C	Y SIGNAL GAMMA COEFF. 3
13		30	30	30	30	Y SIGNAL GAMMA COEFF. 4
14		4D	4D	4D	4D	Y SIGNAL GAMMA COEFF. 5
15		76	76	76	76	Y SIGNAL GAMMA COEFF. 6
16		BA	BA	BA	BA	Y SIGNAL GAMMA COEFF. 7
17		DA	DA	DA	DA	Y SIGNAL GAMMA COEFF. 8
18		OO	OO	OO	OO	Y LPF SELECTION
19		11	11	11	11	Cr/Cb/Y LPF SELECTION
1A		42	42	42	42	C MATRIX COEF. OF Cr SIGNAL
1B		66	66	66	66	C MATRIX COEF. OF Cb SIGNAL
1E		24	24	24	24	C W/B COEF. OF G SIGNAL
1F		05	05	05	05	C DARK SLICE COEF. OF Cr SIG.
20		00	00	00	00	C DARK SLICE COEF. OF Cb SIG.
21		FE	FE	FE	FE	C DARK SLICE COEF. OF G SIG.
22		05	05	05	05	C SIGNAL GAMMA BENDING POINT 1
23		0D	0D	0D	0D	C SIGNAL GAMMA BENDING POINT 2
24		1A	1A	1A	1A	C SIGNAL GAMMA BENDING POINT 3
25		38	38	38	38	C SIGNAL GAMMA BENDING POINT 4
26		58	58	58	58	C SIGNAL GAMMA BENDING POINT 5
27		88	88	88	88	C SIGNAL GAMMA BENDING POINT 6
28		BA	BA	BA	BA	C SIGNAL GAMMA BENDING POINT 7
29		DA	DA	DA	DA	C SIGNAL GAMMA BENDING POINT 8
2A		59	59	59	59	Cr(R-G) SIGNAL POSITIVE GAIN
2B		59	59	59	59	Cr(R-G) SIGNAL NEGATIVE GAIN
2C		F2	F2	F2	F2	Cr(B-G) SIGNAL POSITIVE GAIN
2D		F2	F2	F2	F2	Cr(B-G) SIGNAL NEGATIVE GAIN
2E		D9	D9	D9	D9	Cb(R-G) SIGNAL POSITIVE GAIN
2F		D9	D9	D9	D9	Cb(R-G) SIGNAL NEGATIVE GAIN
30		72	72	72	72	Cb(B-G) SIGNAL POSITIVE GAIN
31		72	72	72	72	Cb(B-G) SIGNAL NEGATIVE GAIN
3A		C8	C8	C8	C8	NEGA MODE W/B B CONTROL
3B		30	30	30	30	CINEMA/SPOT MODE AE TARGET
3C		35	35	35	35	R DETECT WINDOW H START POINT
3D		50	50	50	50	R DETECT WINDOW H STOP POINT
3E		3A	3A	3A	3A	R DETECT WINDOW V START POINT
3F		4B	4B	4B	4B	R DETECT WINDOW V STOP POINT
40		OO	OO	OO	OO	DSP ODM COMMEND
41		FF	FF	FF	FF	NOT USED
42		80	80	80	80	COLOR ADJUST START VALUE
43		FF	FF	FF	FF	NOT USED
44		FF	FF	FF	FF	NOT USED
45		FF	FF	FF	FF	NOT USED
46		00	00	00	00	CCD DEFECT COMPENSATION FACTOR
47		E0	E0	E0	E0	ODM AE CLIP THRESHOULD VALUE

		VP-A20		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
48		FF	FF	FF	FF	ODM Y UPPER VALUE OF AE MODE
49		OO	OO	OO	OO	ODM Y LOWER VALUE OF AE MODE
4A		3F	3F	3F	3F	ODM Y UPPER VALUE OF AWB MODE
4B		OO	OO	OO	OO	ODM Y LOWER VALUE OF AWB MODE
4C		FF	FF	FF	FF	R-Y THRESHOULD VALUE OF AWB MODE
4D		FF	FF	FF	FF	B-Y THRESHOULD VALUE OF AWB MODE
4E		3F	3F	3F	3F	(R-Y)+(B-Y) THRESHOULD VALUE
4F		20	20	20	20	WHITE DETECTION THRESHOLD VALUE
50		OO	OO	OO	OO	DIGITAL CLAMP OPTICAL BLACK POINT
51		O1	O1	O1	O1	Y DELAY CONTROL SELECTION
52		90	90	90	90	Y SIGNAL GAIN
56		2A	2A	2A	2A	LUMINANCE BLANK LEVEL
59		87	87	87	87	BURST FLAG DELAY SELECTION
5A		OO	OO	OO	OO	FSC/2FSC CONTROL
5B		OO	OO	OO	OO	DELAY CONTROL SELECTION
5C		3F	3F	3F	3F	DELAY CONTROL SELECTION
60		OO	OO	OO	OO	INVERSE NUMBER OF V ZOOM RATIO
61		O9	O9	O9	O9	CCD V START POINT(INTEGER LINE)
62		OO	OO	OO	OO	CCD V START POINT(SUB PIXEL)
63		83	83	83	83	SHUTTER MODE
64		FF	FF	FF	FF	HIGH SHUTTER SPEED CONTROL
68		OO	OO	OO	OO	RG/SHP PULSE WIDTH ADJUST
69		80	80	80	80	D ZOOM MODE SELECTION
6A		OO	OO	OO	OO	HORIZONTAL D ZOOM STEP
6B		OO	OO	OO	OO	VERTICAL D ZOOM STEP
6C		OO	OO	OO	OO	HORIZENTAL START READ ADDRESS -H
6D		O1	O1	O1	O1	HORIZENTAL START READ ADDRESS -L
6E		OO	OO	OO	OO	HORIZONTAL D ZOOM START SUB PIXEL
6F		OO	OO	OO	OO	V D ZOOM START SUB PIXEL ODD FIELD
70		OO	OO	OO	OO	V D ZOOM START SUB PIXEL EVEN FIELD
79		60	60	60	60	R VALUE OF SEPIA MODE
7A		18	18	18	18	G VALUE OF SEPIA MODE
7B		78	78	78	78	R VALUE OF YELLOW MODE
7C		60	60	60	60	G VALUE OF YELLOW MODE
7D		88	88	88	88	HALL REFERENSE START VALUE
7E		3A	3A	3A	3A	HALL GAIN START VALUE
7F		10	10	10	10	HALL MINIMUM VALUE (IRIS OPEN)
80		D0	D0	D0	D0	HALL MAXIMUM VALUE(IRIS CLOSE)
81		15	15	15	15	OUTDOOR DETECT IRIS CTL VALUE
84		CA	CA	CA	CA	IRIS CONTROL MIN VALUE
85		35	35	35	35	IRIS CONTROL MAX VALUE
86		02	02	02	02	TARGET MARGEIN OF IRIS ADJUST
87		12	12	12	12	NOT USED
89		FF	FF	FF	FF	NOT USED
8A		0B	0B	0B	0B	BLC ON AE TARGET
8B		30	30	30	30	CINEMA/SPOT LIGHT BLC TARGET
8C		O8	O8	O8	O8	SAND/SNOW MODE AE TARGET
8D		O8	O8	O8	O8	NEGA MODE AE TARGET
8E		FF	FF	FF	FF	NOT USED
91		45	45	45	45	R INDOOR START VALUE OF W/B ADJUST
92		85	85	85	85	B INDOOR START VALUE OF W/B ADJUST
93		65	65	65	65	R OUTDOOR START VALUE OF W/B ADJUST
94		68	68	68	68	R INDOOR START VALUE OF W/B ADJUST
99		03	03	03	03	R OUTDOOR CONTROL UP/DOWN MARGIN
9A		83	83	83	83	R INDOOR CONTROL UP/DOWN MARGIN
9B		O3	O3	O3	O3	B INDOOR CONTROL UP/DOWN MARGIN
9C		90	90	90	90	B OUTDOOR CONTROL UP/DOWN MARGIN
9D		10	10	10	10	INITIAL(POWER ON) R CTL START DATA
9E		OO	OO	OO	OO	INITIAL(POWER ON) B CTL START VALUE
9F		6E	6E	6E	6E	W/B TABLE MODE

		VP-A20		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
A0		O2	O2	O2	O2	W/B SD/3+AEAVR-MAXDETE
A1		90	90	90	90	W/B CONTROL BOUNDARY
A2		A6	A6	A6	A6	W/B CTL STOP HALL OF MACRO AREA
A3		43	43	43	43	W/B OUTDOOR STOP HALL
A4		00	00	00	00	R/B CTL SPEED UP/DOWN MODE
A5		FF	FF	FF	FF	NOT USED
A6		FF	FF	FF	FF	NOT USED
A7		20	20	20	20	W/B STABLE CONDITION
A8		FF	FF	FF	FF	NOT USED
A9		FF	FF	FF	FF	NOT USED
AA		0E	0E	0E	0E	FOCUS RESET POSITION L
AB		11	11	11	11	FOCUS RESET POSITION H
AC		4B	4B	4B	4B	ZOOM RESET POSITION L
AD		12	12	12	12	ZOOM RESET POSITION H
AE		83	83	83	83	ZOOM RESET DIFERRENCE
AF		40	40	40	40	AF FILTER1 DATA MAGNIFY RATO
B0		B0	B0	B0	B0	FILTER1 NOISE LEVEL(L) OF AREA1
B1		OO	OO	OO	OO	FILTER1 NOISE LEVEL(H) OF AREA1
B2		OO	OO	OO	OO	FILTER1 NOISE LEVEL(L) OF AREA2
B3		O3	O3	O3	O3	FILTER1 NOISE LEVEL(H) OF AREA2
B4		80	80	80	80	FILTER2 NOISE LEVEL(L) OF AREA1
B5		OO	OO	OO	OO	FILTER2 NOISE LEVEL(H) OF AREA1
B6		OO	OO	OO	OO	FILTER2 NOISE LEVEL(L) OF AREA2
B7		O2	O2	O2	O2	FILTER2 NOISE LEVEL(H) OF AREA2
BA		30	30	30	30	CHROMA SUPRESS START AGC
BE		A0	A0	A0	A0	AE TAGET OF NEGA MODE(FADE IN)
BF		FF	FF	FF	FF	NOT USED
C0		2A	2A	2A	2A	FADE LIMIT OF NEGA MODE
C1		28	28	28	28	DATA CONTROL BOUNDARY OF OUTDOOR
C2		24	24	24	24	NEGA MODE W/B R-CONTROL DATA
C3		C1	C1	C1	C1	FOCUS RETURN LOW BYTE
C4		14	14	14	14	FOCUS RETURN HIGH BYTE
C5		42	42	42	42	ZOOM RETURN LOW BYTE
C6		12	12	12	12	ZOOM RETURN HIGH BYTE
C7		O5	O5	O5	O5	LENS CHECK MARGIN (WIDE)
C8		12	12	12	12	LENS CHECK MARGIN (TELE)
C9		65	65	65	65	ADJUST MODE IRIS SETTING DATA
CA		OO	OO	C0	C0	D ZOOM RAITO
CB		FF	FF	FF	FF	NOT USED
CC		00	00	00	00	SETUP ADJUST ENABLE
D1		FF	FF	FF	FF	HALL AUTO CHECK
D2		FF	FF	FF	FF	AGC AUTO CHECK
D3		FF	FF	FF	FF	LENS CHECK OF PCB LINE
D4		FF	FF	FF	FF	GYRO SENSOR CHECK (H)
D5		FF	FF	FF	FF	GYRO SENSOR CHECK (V)
D7		01	01	01	01	ZOOM/FOCUS CHECK ENABLE
D8		20	20	20	20	VR ZOOM CENTER MARGEIN
D9		00	00	00	00	COLOR GAIN ADJUST
DA		7E	7E	7E	7E	SETUP AUTO ADJUST
DB		O8	O8	O8	O8	HALL CHECK THRESHOULD
DC		82	82	82	82	COLOR ADJUST TARGET VALUE
DD		89	89	89	89	HALL ADJUST GAIN TARGET
DE		4D	4D	4D	4D	HALL ADJUST CENTER
DF		00	00	00	00	NOT USED
E0		FF	FF	FF	FF	NOT USED
E1		FF	FF	FF	FF	NOT USED
E2		FF	FF	FF	FF	NOT USED
E3		FF	FF	FF	FF	NOT USED
E4		FF	FF	FF	FF	NOT USED
E5		FF	FF	FF	FF	NOT USED

		VP-A20		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
E6		FF	FF	FF	FF	NOT USED
E7		FF	FF	FF	FF	NOT USED
E8		FF	FF	FF	FF	NOT USED
E9		FF	FF	FF	FF	NOT USED
EA		FF	FF	FF	FF	NOT USED
EB		FF	FF	FF	FF	NOT USED
EC		FF	FF	FF	FF	NOT USED
ED		FF	FF	FF	FF	NOT USED
EE		FF	FF	FF	FF	NOT USED
EF		FF	FF	FF	FF	NOT USED
F0		FF	FF	FF	FF	NOT USED
F1		FF	FF	FF	FF	NOT USED
F2		FF	FF	FF	FF	NOT USED
F3		FF	FF	FF	FF	NOT USED

6. Initial data of camera parts adjustment - **CAMERA AF 2nd MICOM (UPD784035GC-818) DATA**

		VP-A20/A21		VP-A22		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
CD	HALLA	70	70	70	70	70	70	HALL AUTO ADJUSTMENT
CE	IRISA	D0	D0	D0	D0	D0	D0	IRIS CONTROL RANGE ADJUSTMENT
CF	WBA	FF	FF	FF	FF	FF	FF	WHITE BALANCE AUTO ADJUSTMENT
D0	LENSA	FF	FF	FF	FF	FF	FF	LENS AUTO ADJUSTMENT
D6	Z.CHK	80	80	80	80	80	80	ZOOM VR CENTER AUTO ADJUSTMENT
O3	IRIS1	70	70	70	70	70	70	IRIS LEVEL CONTROL-HIGH BYTE
O5	P.CL	40	40	40	40	40	40	P.CLK ADJUSTMENT
O7	ADREF	OO	OO	OO	OO	OO	OO	A/D REFERENCE CONTROL(SETUP)
O8	S.CLP	O8	O8	O8	O8	O8	O8	SOFT CLIP CONTROL
O9	AGC1	18	18	18	18	18	18	AGC CONTROL
OB	HAPER	5A	5A	5A	5A	5A	5A	HORIZONTAL APPERTURE GAIN
OC	YSEL	FA	FA	FA	FA	FA	FA	VERTICAL APPERTURE GAIN
1C	CWBR	3D	3D	3D	3D	3D	3D	COLOR W/B COEFF. OF Cr SIGNAL
1D	CWBB	90	90	90	90	90	90	COLOR W/B COEFF. OF Cb SIGNAL
32	CRGP	47	47	47	47	47	47	INDOOR R-Y POSITIVE GAIN
33	CRGN	50	50	50	50	50	50	INDOOR R-Y NEGATIVE GAIN
34	CHYE	O5	O5	O5	O5	O5	O5	INDOOR R-Y POSITIVE HUE
35	CHB	O8	O8	O8	O8	O8	O8	INDOOR R-Y NEGATIVE HUE
36	CBGP	28	28	28	28	28	28	INDOOR B-Y POSITIVE GAIN
37	CBGN	20	20	20	20	20	20	INDOOR B-Y NEGATIVE GAIN
38	CHGR	20	20	20	20	20	20	INDOOR B-Y POSITIVE HUE
39	PCBHN	OC	OC	OC	OC	OC	OC	INDOOR B-Y NEGATIVE HUE
53	ECGAN	88	88	88	88	88	88	CHROMA GAIN CONTROL
54	ESY	83	83	83	83	83	83	Y SET-UP LEVEL CONTROL
55	EWC	D0	D0	D0	D0	D0	D0	WHITE CLIP CONTROL
57	EUSC	EF	EF	EF	EF	EF	EF	B-Y SIGNAL BURST LEVEL CONTROL
58	EVSC	12	12	12	12	12	12	R-Y SIGNAL BURST LEVEL CONTROL
5D	XKCON	O4	O4	O4	O4	O4	O4	SCK CONTROL
5E	MDSEL	O4	O4	O5	O5	O5	O5	D/ZOOM MODE SELECTION
5F	TGMSE	O2	O2	O2	O2	O2	O2	TG MODE SELECTION
65	HRGDL	OE	OE	OE	OE	OE	OE	H1/H2/RG DELAY CONTROL
66	SHP.D	C7	C7	C7	C7	C7	C7	SHP/SHD DELAY CONTROL
67	ADDL	OO	OO	OO	OO	OO	OO	SPO/FECKDELAY CONTROL
71	ROUGP	47	47	47	47	47	47	OUTDOOR R-Y POSITIVE GAIN
72	ROUGN	48	48	48	48	48	48	OUTDOOR R-Y NEGATIVE GAIN
73	CHOYE	O5	O5	O5	O5	O5	O5	OUTDOOR R-Y POSITIVE HUE
74	CHOB	15	15	15	15	15	15	OUTDOOR R-Y NEGATIVE HUE
75	GOUGP	2C	2C	2C	2C	2C	2C	OUTDOOR B-Y POSITIVE GAIN
76	BOUGN	25	25	25	25	25	25	OUTDOOR B-Y NEGATIVE GAIN
77	CHOGR	20	20	20	20	20	20	OUTDOOR B-Y POSITIVE HUE

		VP-A20/A21		VP-A22		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
78	CHOR	OC	OC	OC	OC	OC	OC	OUTDOOR B-Y NEGATIVE HUE
82	AETAL	80	80	80	80	80	80	AE TARGET (LOW BYTE)
83	AETAH	O5	O5	O5	O5	O5	O5	AE TARGET (HIGH BYTE)
88	AGCMA	85	85	85	85	85	85	AGC MAXIMUM CONTROL
8F	WBTAR	86	86	86	86	86	86	WHITE BALANCE R TARGET
90	WBTAB	74	74	74	74	74	74	WHITE BALANCE B TARGET
95	R-IN	45	45	45	45	45	45	R INDOOR CONTROL VALUE
96	B-IN	A0	A0	A0	A0	A0	A0	B INDOOR CONTROL VALUE
97	R-OUT	80	80	80	80	80	80	R OUTDOOR CONTROL VALUE
98	B-OUT	68	68	68	68	68	68	B OUTDOOR CONTROL VALUE
B8	CFAPS	20	20	20	20	20	20	NOISE SLICE START AGC
B9	APNSC	FE	FE	FE	FE	FE	FE	NOISE SLICE MAXIMUM VALUE
BB	CFAOR	O3	O3	O3	O3	O3	O3	CHROMA SUPRESS MAXIMUM VALUE
BC	BLKST	30	30	30	30	30	30	EY BLACK START AGC
BD	BLKMX	O4	O4	O4	O4	O4	O4	EY BLACK MAXIMUM VALUE
00		OO	OO	OO	OO	OO	OO	NOT USED
01		40	40	40	40	40	40	HALL GAIN
02		80	80	80	80	80	80	HALL REFERENCE
04		OO	OO	OO	OO	OO	OO	IRIS LEVEL CONTROL-L
06		OO	OO	OO	OO	OO	OO	P.CLK PWM CONTROL-L
OA		66	66	66	66	66	66	H/V BLACK NOIS THRESHOLD/GAIN
0D		13	13	13	13	13	13	APERTURE SLICE CONTROL
OE		A8	A8	A8	A8	A8	A8	Y HI-REF. VALUE FOR C SUPRESS
OF		10	10	10	10	10	10	EDGE REF. VALUE FOR C SUPRESS
10		05	05	05	05	05	05	Y SIGNAL GAMMA COEFF. 1
11		0A	0A	0A	0A	0A	0A	Y SIGNAL GAMMA COEFF. 2
12		1C	1C	1C	1C	1C	1C	Y SIGNAL GAMMA COEFF. 3
13		30	30	30	30	30	30	Y SIGNAL GAMMA COEFF. 4
14		4D	4D	4D	4D	4D	4D	Y SIGNAL GAMMA COEFF. 5
15		76	76	76	76	76	76	Y SIGNAL GAMMA COEFF. 6
16		BA	BA	BA	BA	BA	BA	Y SIGNAL GAMMA COEFF. 7
17		DA	DA	DA	DA	DA	DA	Y SIGNAL GAMMA COEFF. 8
18		OO	OO	OO	OO	OO	OO	Y LPF SELECTION
19		11	11	11	11	11	11	Cr/Cb/Y LPF SELECTION
1A		42	42	42	42	42	42	C MATRIX COEF. OF Cr SIGNAL
1B		66	66	66	66	66	66	C MATRIX COEF. OF Cb SIGNAL
1E		24	24	24	24	24	24	C W/B COEF. OF G SIGNAL
1F		05	05	05	05	05	05	C DARK SLICE COEF. OF Cr SIG.
20		OO	OO	OO	OO	OO	OO	C DARK SLICE COEF. OF Cb SIG.
21		FE	FE	FE	FE	FE	FE	C DARK SLICE COEF. OF G SIG.
22		05	05	05	05	05	05	C SIGNAL GAMMA BENDING POINT 1
23		0D	0D	0D	0D	0D	0D	C SIGNAL GAMMA BENDING POINT 2
24		1A	1A	1A	1A	1A	1A	C SIGNAL GAMMA BENDING POINT 3
25		38	38	38	38	38	38	C SIGNAL GAMMA BENDING POINT 4
26		58	58	58	58	58	58	C SIGNAL GAMMA BENDING POINT 5
27		88	88	88	88	88	88	C SIGNAL GAMMA BENDING POINT 6
28		BA	BA	BA	BA	BA	BA	C SIGNAL GAMMA BENDING POINT 7
29		DA	DA	DA	DA	DA	DA	C SIGNAL GAMMA BENDING POINT 8
2A		59	59	59	59	59	59	Cr(R-G) SIGNAL POSITIVE GAIN
2B		59	59	59	59	59	59	Cr(R-G) SIGNAL NEGATIVE GAIN
2C		F2	F2	F2	F2	F2	F2	Cr(B-G) SIGNAL POSITIVE GAIN
2D		F2	F2	F2	F2	F2	F2	Cr(B-G) SIGNAL NEGATIVE GAIN
2E		D9	D9	D9	D9	D9	D9	Cb(R-G) SIGNAL POSITIVE GAIN
2F		D9	D9	D9	D9	D9	D9	Cb(R-G) SIGNAL NEGATIVE GAIN
30		72	72	72	72	72	72	Cb(B-G) SIGNAL POSITIVE GAIN
31		72	72	72	72	72	72	Cb(B-G) SIGNAL NEGATIVE GAIN
3A		C8	C8	C8	C8	C8	C8	NEGA MODE W/B B CONTROL
3B		30	30	30	30	30	30	CINEMA/SPOT MODE AE TARGET
3C		35	35	35	35	35	35	R DETECT WINDOW H START POINT
3D		50	50	50	50	50	50	R DETECT WINDOW H STOP POINT
3E		3A	3A	3A	3A	3A	3A	R DETECT WINDOW V START POINT

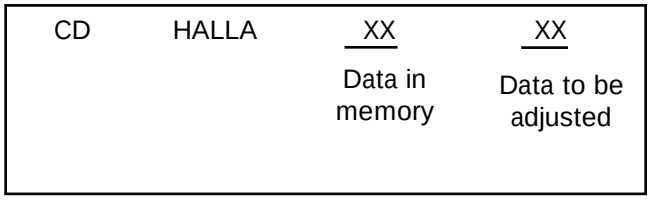
		VP-A20/A21		VP-A22		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
3F		4B	4B	4B	4B	4B	4B	R DETECT WINDOW V STOP POINT
40		OO	OO	OO	OO	OO	OO	DSP ODM COMMEND
41		70	70	70	70	70	70	CLIP COUNTER THRESHOULD
42		80	80	80	80	80	80	COLOR ADJUST START VALUE
43		OO	OO	85	85	88	88	R TARGET UP/DOWN OF D ZOOM
44		OO	OO	OO	OO	OO	OO	B TARGET UP/DOWN OF D ZOOM
45		FF	FF	FF	FF	FF	FF	SHUTTER OF D ZOOM
46		00	00	00	00	00	00	CCD DEFECT COMPENSATION FACTOR
47		F0	F0	F0	F0	F0	F0	ODM AE CLIP THRESHOULD VALUE
48		FF	FF	FF	FF	FF	FF	ODM Y UPPER VALUE OF AE MODE
49		OO	OO	OO	OO	OO	OO	ODM Y LOWER VALUE OF AE MODE
4A		3F	3F	3F	3F	3F	3F	ODM Y UPPER VALUE OF AWB MODE
4B		OO	OO	OO	OO	OO	OO	ODM Y LOWER VALUE OF AWB MODE
4C		FF	FF	FF	FF	FF	FF	R-Y THRESHOULD VALUE OF AWB MODE
4D		FF	FF	FF	FF	FF	FF	B-Y THRESHOULD VALUE OF AWB MODE
4E		3F	3F	3F	3F	3F	3F	(R-Y)+(B-Y) THRESHOULD VALUE
4F		20	20	20	20	20	20	WHITE DETECTION THRESHOLD VALUE
50		OO	OO	OO	OO	OO	OO	DIGITAL CLAMP OPTICAL BLACK POINT
51		O1	O1	O1	O1	O1	O1	Y DELAY CONTROL SELECTION
52		98	98	98	98	98	98	Y SIGNAL GAIN
56		2A	2A	2A	2A	2A	2A	LUMINANCE BLANK LEVEL
59		87	87	87	87	87	87	BURST FLAG DELAY SELECTION
5A		OO	OO	OO	OO	OO	OO	FSC/2FSC CONTROL
5B		OO	OO	OO	OO	OO	OO	DELAY CONTROL SELECTION
5C		3F	3F	3F	3F	3F	3F	DELAY CONTROL SELECTION
60		OO	OO	OO	OO	OO	OO	INVERSE NUMBER OF V ZOOM RATIO
61		OC	OC	OC	OC	OC	OC	CCD V START POINT(INTEGER LINE)
62		OO	OO	OO	OO	OO	OO	CCD V START POINT(SUB PIXEL)
63		83	83	83	83	83	83	SHUTTER MODE
64		FF	FF	FF	FF	FF	FF	HIGH SHUTTER SPEED CONTROL
68		OO	OO	OO	OO	OO	OO	RG/SHP PULSE WIDTH ADJUST
69		80	80	80	80	80	80	D ZOOM MODE SELECTION
6A		OO	OO	OO	OO	OO	OO	HORIZONTAL D ZOOM STEP
6B		OO	OO	OO	OO	OO	OO	VERTICAL D ZOOM STEP
6C		OO	OO	OO	OO	OO	OO	HORIZENTAL START READ ADDRESS -H
6D		O1	O1	O1	O1	O1	O1	HORIZENTAL START READ ADDRESS -L
6E		OO	OO	OO	OO	OO	OO	HORIZONTAL D ZOOM START SUB PIXEL
6F		OO	OO	OO	OO	OO	OO	V D ZOOM START SUB PIXEL ODD FIELD
70		OO	OO	OO	OO	OO	OO	V D ZOOM START SUB PIXEL EVEN FIELD
79		48	48	48	48	48	48	R VALUE OF SEPIA MODE
7A		20	20	20	20	20	20	G VALUE OF SEPIA MODE
7B		78	78	78	78	78	78	R VALUE OF YELLOW MODE
7C		60	60	60	60	60	60	G VALUE OF YELLOW MODE
7D		88	88	88	88	88	88	HALL REFERENSE START VALUE
7E		3A	3A	3A	3A	3A	3A	HALL GAIN START VALUE
7F		10	10	10	10	10	10	HALL MINIMUM VALUE (IRIS OPEN)
80		D0	D0	D0	D0	D0	D0	HALL MAXIMUM VALUE(IRIS CLOSE)
81		18	18	18	18	18	18	OUTDOOR DETECT IRIS CTL VALUE
84		CA	CA	CA	CA	CA	CA	IRIS CONTROL MIN VALUE
85		35	35	35	35	35	35	IRIS CONTROL MAX VALUE
86		02	02	02	02	02	02	TARGET MARGEIN OF IRIS ADJUST
87		12	12	12	12	12	12	DIGITAL CLAMP CCD
89		10	10	10	10	10	10	NOT USED
8A		0B	0B	0B	0B	0B	0B	BLC ON AE TARGET
8B		40	40	40	40	40	40	CINEMA/SPOT LIGHT BLC TARGET
8C		O8	O8	O8	O8	O8	O8	SAND/SNOW MODE AE TARGET
8D		O8	O8	O8	O8	O8	O8	NEGA MODE AE TARGET
8E		OA	OA	OA	OA	OA	OA	NOT USED
91		45	45	45	45	45	45	R INDOOR START VALUE OF W/B ADJUST
92		85	85	85	85	85	85	B INDOOR START VALUE OF W/B ADJUST
93		65	65	65	65	65	65	R OUTDOOR START VALUE OF W/B ADJUST

		VP-A20/A21		VP-A22		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
94		68	68	68	68	68	68	R INDOOR START VALUE OF W/B ADJUST
99		O2	O2	O2	O2	O2	O2	R OUTDOOR CONTROL UP/DOWN MARGIN
9A		83	83	83	83	83	83	R INDOOR CONTROL UP/DOWN MARGIN
9B		O3	O3	O3	O3	O3	O3	B INDOOR CONTROL UP/DOWN MARGIN
9C		8A	8A	8A	8A	8A	8A	B OUTDOOR CONTROL UP/DOWN MARGIN
9D		OO	OO	OO	OO	OO	OO	INITIAL(POWER ON) R CTL START DATA
9E		OO	OO	OO	OO	OO	OO	INITIAL(POWER ON) B CTL START VALUE
9F		6E	6E	6E	6E	6E	6E	W/B TABLE MODE
A0		O2	O2	O2	O2	O2	O2	W/B SD/3+AEAVR-MAXDETE
A1		90	90	90	90	90	90	W/B CONTROL BOUNDARY
A2		A6	A6	A6	A6	A6	A6	W/B CTL STOP HALL OF MACRO AREA
A3		48	48	48	48	48	48	W/B OUTDOOR STOP HALL
A4		00	00	00	00	00	00	R/B CTL SPEED UP/DOWN MODE
A5		40	40	40	40	40	40	V NOISE THRESHOULD OF EIS
A6		OO	OO	OO	OO	OO	OO	H NOISE THRESHOULD OF EIS
A7		20	20	20	20	20	20	W/B STABLE CONDITION
A8		OO	OO	O5	O5	O5	O5	R CONTROL UP/DOWN OF D Z00M
A9		OO	OO	O5	O5	O5	O5	B CONTROL UP/DOWN OF D Z00M
AA		0E	0E	0E	0E	0E	0E	FOCUS RESET POSITION L
AB		11	11	11	11	11	11	FOCUS RESET POSITION H
AC		4B	4B	4B	4B	4B	4B	ZOOM RESET POSITION L
AD		12	12	12	12	12	12	ZOOM RESET POSITION H
AE		83	83	83	83	83	83	ZOOM RESET DIFERRENCE
AF		40	40	40	40	40	40	AF FILTER1 DATA MAGNIFY RATO
B0		B0	B0	B0	B0	B0	B0	FILTER1 NOISE LEVEL(L) OF AREA1
B1		OO	OO	OO	OO	OO	OO	FILTER1 NOISE LEVEL(H) OF AREA1
B2		OO	OO	OO	OO	OO	OO	FILTER1 NOISE LEVEL(L) OF AREA2
B3		O3	O3	O3	O3	O3	O3	FILTER1 NOISE LEVEL(H) OF AREA2
B4		80	80	80	80	80	80	FILTER2 NOISE LEVEL(L) OF AREA1
B5		OO	OO	OO	OO	OO	OO	FILTER2 NOISE LEVEL(H) OF AREA1
B6		OO	OO	OO	OO	OO	OO	FILTER2 NOISE LEVEL(L) OF AREA2
B7		O2	O2	O2	O2	O2	O2	FILTER2 NOISE LEVEL(H) OF AREA2
BA		30	30	30	30	30	30	CHROMA SUPRESS START AGC
BE		A0	A0	A0	A0	A0	A0	AE TAGET OF NEGA MODE(FADE IN)
BF		66	66	66	66	66	66	H/V ADJUST OF D ZOOM HEADER COMMEND
C0		2A	2A	2A	2A	2A	2A	FADE LIMIT OF NEGA MODE
C1		28	28	28	28	28	28	DATA CONTROL BOUNDARY OF OUTDOOR
C2		24	24	24	24	24	24	NEGA MODE W/B R-CONTROL DATA
C3		A1	A1	A1	A1	A1	A1	FOCUS RETURN LOW BYTE
C4		15	15	15	15	15	15	FOCUS RETURN HIGH BYTE
C5		A0	A0	A0	A0	A0	A0	ZOOM RETURN LOW BYTE
C6		12	12	12	12	12	12	ZOOM RETURN HIGH BYTE
C7		O5	O5	O5	O5	O5	O5	LENS CHECK MARGIN (WIDE)
C8		12	12	12	12	12	12	LENS CHECK MARGIN (TELE)
C9		65	65	65	65	65	65	ADJUST MODE IRIS SETTING DATA
CA		7F	7F	7F	7F	7F	7F	D ZOOM RAITO
CB		O6	O6	O6	O6	O6	O6	AE UP/DOWN OF NEGA MODE BLC
CC		00	00	00	00	00	00	SETUP ADJUST ENABLE
D1		FF	FF	FF	FF	FF	FF	HALL AUTO CHECK
D2		FF	FF	FF	FF	FF	FF	AGC AUTO CHECK
D3		FF	FF	FF	FF	FF	FF	LENS CHECK OF PCB LINE
D4		FF	FF	FF	FF	FF	FF	GYRO SENSOR CHECK (H)
D5		FF	FF	FF	FF	FF	FF	GYRO SENSOR CHECK (V)
D7		01	01	01	01	01	01	ZOOM/FOCUS CHECK ENABLE
D8		20	20	20	20	20	20	VR ZOOM CENTER MARGEIN
D9		00	00	00	00	00	00	COLOR GAIN ADJUST
DA		7E	7E	7E	7E	7E	7E	SETUP AUTO ADJUST
DB		O8	O8	O8	O8	O8	O8	HALL CHECK THRESHOULD
DC		82	82	82	82	82	82	COLOR ADJUST TARGET VALUE
DD		89	89	89	89	89	89	HALL ADJUST GAIN TARGET
DE		4D	4D	4D	4D	4D	4D	HALL ADJUST CENTER

		VP-A20/A21		VP-A22		VP-A23		
MODE	OSD	DATA1	DATA2	DATA1	DATA2	DATA1	DATA2	NAME OF ADJUSTMENT
DF		00	00	00	00	00	00	NOT USED
E0		AA	AA	AA	AA	AA	AA	BK NOISE TH/GAIN OF EIS
E1		5F	5F	5F	5F	5F	5F	H APPERTURE GAIN OF EIS
E2		FF	FF	FF	FF	FF	FF	#0C OF EIS ON
E3		OB	OB	OB	OB	OB	OB	#OD OF EIS ON
E4		A8	A8	A8	A8	A8	A8	#OE OF EIS ON
E5		10	10	10	10	10	10	#OF OF EIS ON
E6		OO	OO	OO	OO	OO	OO	#18 OF EIS ON
E7		O1	O1	O1	O1	O1	O1	EIS DEMO
E8		69	69	69	69	69	69	V GAIN-1(A/D GAIN)
E9		O8	O8	O8	O8	O8	O8	V GAIN-2(CCD GAIN)
EA		EB	EB	EB	EB	EB	EB	V GAIN-3(CENTERING GAIN)
EB		O8	O8	O8	O8	O8	O8	V STOP NOISE THRESHOULD
EC		8C	8C	8C	8C	8C	8C	H GAIN-1(A/D GAIN)
ED		O8	O8	O8	O8	O8	O8	H GAIN-2(CCD GAIN)
EE		EB	EB	EB	EB	EB	EB	H GAIN-3(CENTERING GAIN)
EF		09	09	09	09	09	09	H STOP NOISE THRESHOULD
F0		OO	OO	OO	OO	OO	OO	D-ZOOM STEP
F1		O1	O1	O1	O1	O1	O1	NOT USED
F2		80	80	80	80	80	80	R TARGET OF W/B ADJUST
F3		80	80	80	80	80	80	B TARGET OF W/B ADJUST

Note : On table you see the "XX XX" for DATA 1/DATA 2
"XX XX" means arbitrary value.

<Example of the TV screen>



5-2-2 Camera System Adjustment

Note : From now on, the structure of every adjustment is as follows.

Step	Adjustment Item
1) Mode and input signal/ alignment tape 2) Test point and ADJ. part 3) And after Result and Remarks	

Note : The on-screen display information.
"XX XX" means arbitrary value.
It can be different number depend on the conditions.

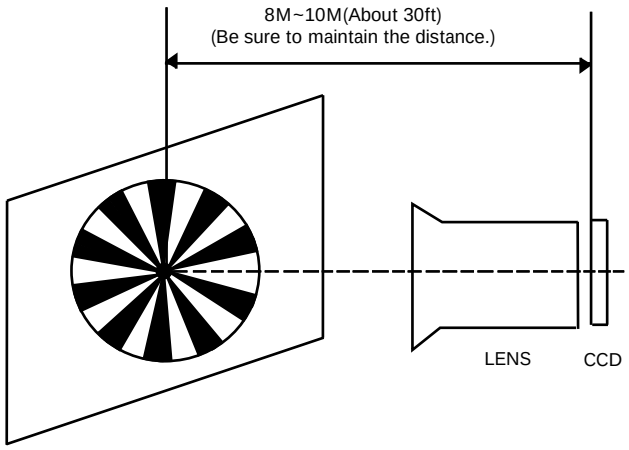
CD	HALLA	XX	XX

1. Focus to zoom tracking

Note : To maintain proper focus throughout the zoom range, the focus lens position must be changed as the zoom lens is moved.
During this adjustment the microprocessor will measure the focus positioning requirements at the wide and telephoto position of the zoom lens.

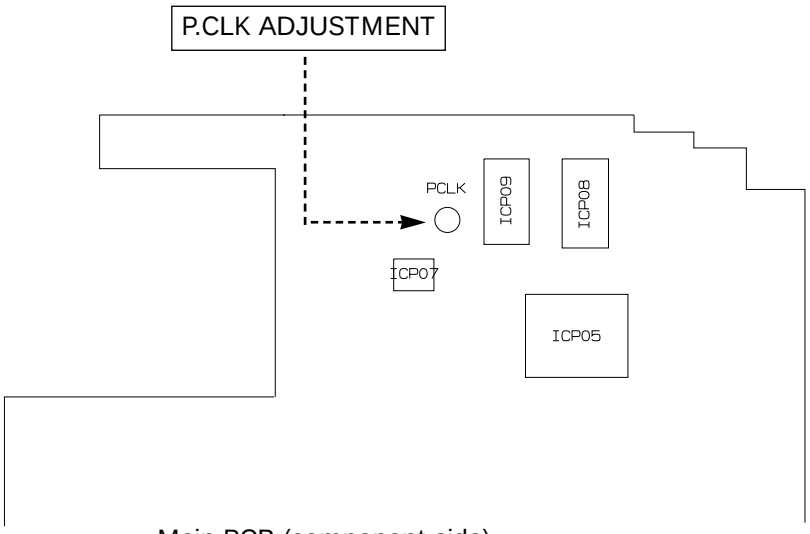
1) Camera "E-E".
2) Focus chart (Attached on the last page of this manual).
3) Aim the camera at the focus chart placed about 30ft. (8 to 10 meters) away and perpendicular to the center of the lens.
The chart should be placed on the flat, gray or white wall.
4) Connect monitor TV jack to video output jack.
5) Press the "BLC (MODE UP)" and "FADE (MODE DOWN)" button, so that the OSD start is "DO LENSA XX XX".
6) Focus adjustment

a. Full auto : Press "START/STOP (CONFIRM)" button for full auto adjustment.
The camera will move both zoom and focus lens.
The adjustment is finished when the O.K! message appears on the TV screen.



2. P. CLK Adjustment

1) “Camera”, no signal input.
2) P.CLK and AF MICOM.
3) Connent a frequency counter to P.CLK.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “05 P.CLK XX XX”.
5) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that frequency is 9.453125MHz ± 50Hz.



Main PCB (component side)

3. Zoom VR Center

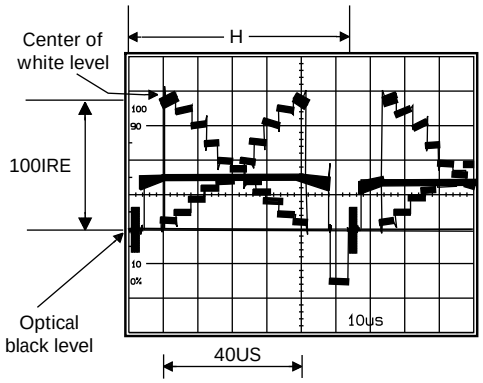
1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and EVR.
3) Connect monitor TV to video(output) jack.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “D6 Z, CHK XX XX”.
5) Press “START/STOP (CONFIRM)” button.
6) Then, the microprocessor will work ;
   - Find the Zoom VR Centerposition
   - Store the data to mode D6.

4. Auto hall

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and EVR.
3) Connect monitor TV to video(output) jack.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “CD HALLA XX XX”.
5) Press “START/STOP (CONFIRM)” button.
6) Then, the microprocessor will work ;
   - IRIS open, HALL maximum value found,
   - IRIS closed, HALL minimum value found,
   - IRIS open, HALL maximum value found,
   - Store the data to mode 02 and mode 01.
   - Store the HALL min./max. data to mode 7F and mode 80.

5. AUTO IRIS

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “CE IRISA XX XX”.
5) Press “START/STOP(confirm)” Bttom.100IRE.
6) Then, the micro process of will work;
   - IRIS open, IRIS control minimum Value found.
   - IRIS close, IRIS control minimum Value found.
   - Store the data to mode 84 and mode 85.
7) The OSD shows “O.K”.

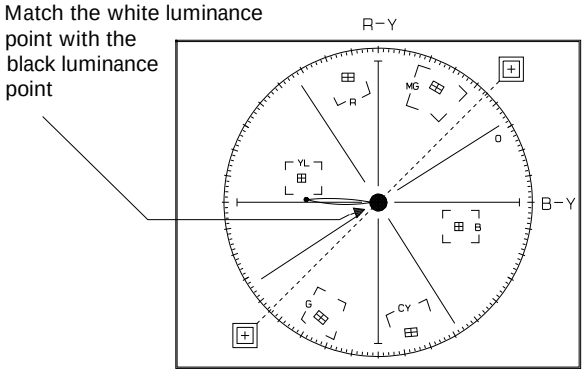


6. Auto white balance

1) Camera “E-E”, 3100°K/5100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
4) Connect vectorscope input jack to video(output) jack.
3) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “CF WBA XX XX”.

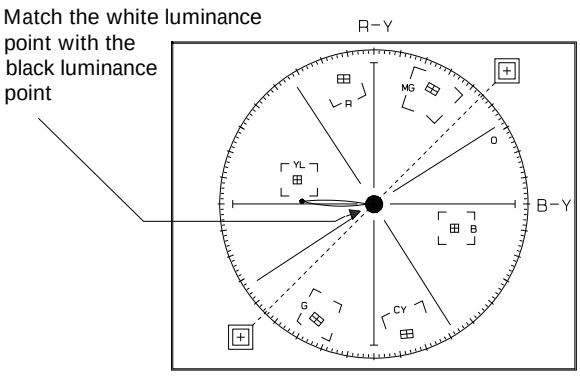
a. W/B Indoor
a-1. Aim the camera at a 3100°K gray-scale chart illuminated at 1500 to 2000 lx. (40us)
a-2. Press “START/STOP (CONFIRM)” button so that the white vector moves to the center on screen of the vectorscope.
a-3. The OSD shows “OK!”.

b. W/B Outdoor
b-1. Aim the camera at a 5100°K gray-scale chart illuminated at 1500 to 2000 lx. (40us)
b-2. Press “START/STOP (CONFIRM)” button so that the white vector moves to the center on screen of the vectorscope.
b-3. The OSD shows “OK!”.



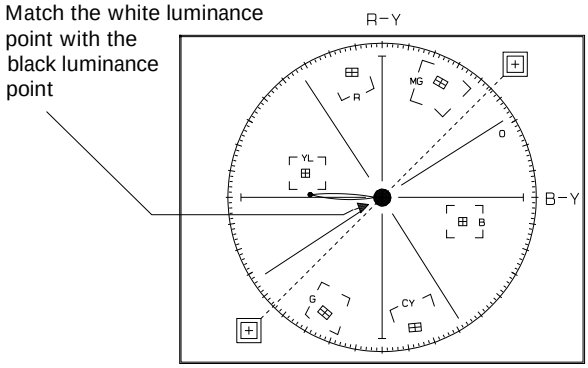
7. Pre white balance (I)

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
3) Connect vectorscope input jack to video(output) jack.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “1C CWBR XX XX”.
5) Aim the camera at a 3100°K gray-scale chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the white vector moves to the B-Y axial on screen of the vectorscope.
7) The OSD shows “OK!”.



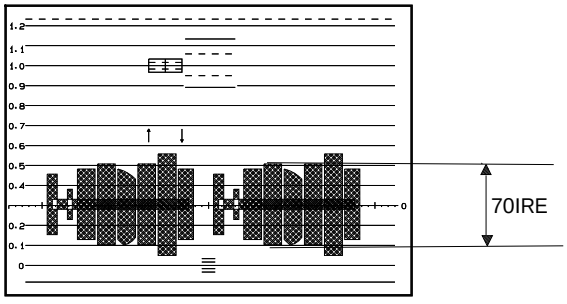
8. Pre white balance (II)

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
4) Connect vectorscope input jack to video(output) jack.
3) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “1D CWBB XX XX”.
5) Aim the camera at a 3100°K gray-scale chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the white vector moves to the R-Y axial on screen of the vectorscope.
7) The OSD shows “OK!”.



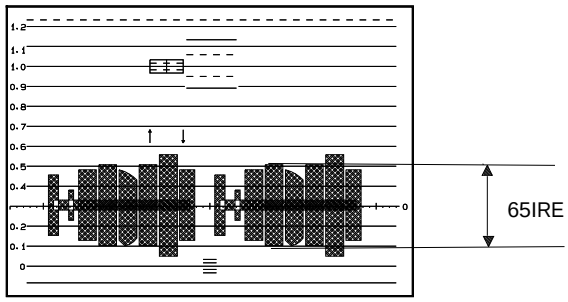
9. R-Y Positive Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “32 CRGP XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the red level is 70IRE.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



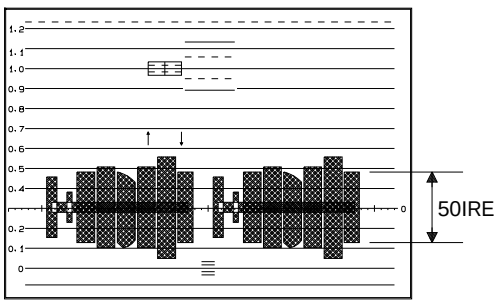
10. R-Y Negative Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “33 CRGN XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the cyan level is 65IRE.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



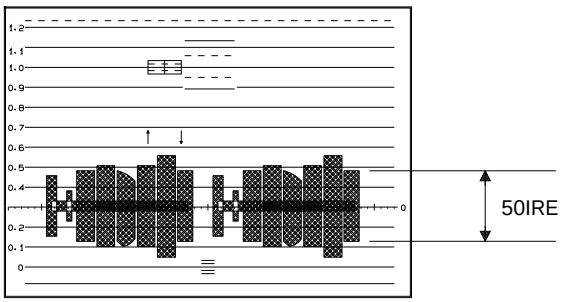
11. B-Y Positive Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “36 CBGP XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the blue level is 50IRE.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



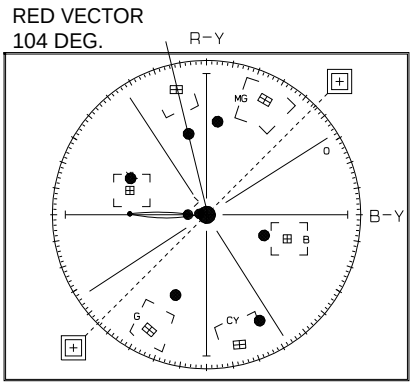
12. B-Y Negative Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “37 CBGN XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the yellow level is 50IRE.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



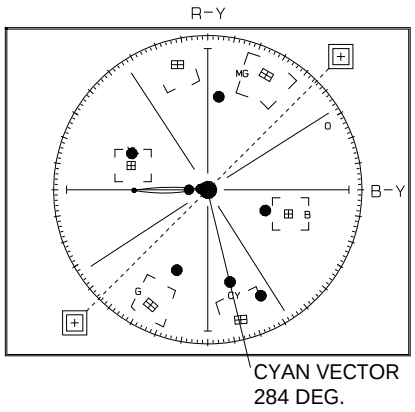
13. R-Y Positive Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “39 CBHN XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the red vector is 104.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



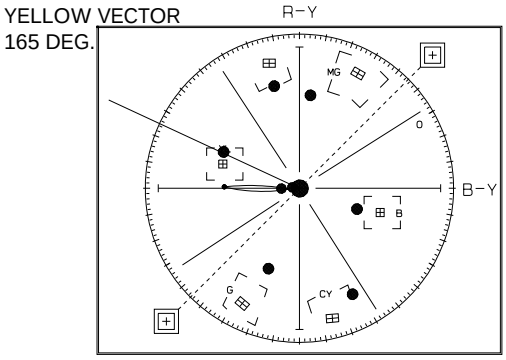
14. R-Y Negative Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “38 CHGR XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the cyan vector is 284.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



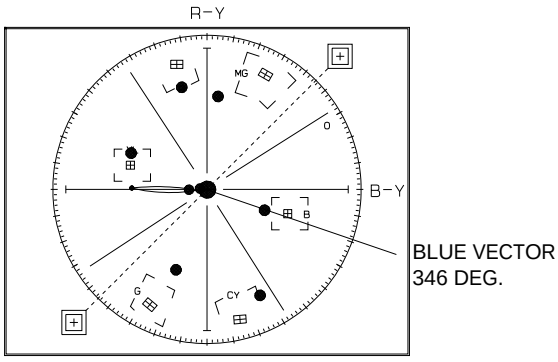
15. B-Y Negative Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “34 CHYE XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the yellow vector is 165.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



16. B-Y Positive Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “BLC (MODE UP)/FADE (MODE DOWN)” button so that the OSD state is “35 CHB XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “ + (DATA UP)/ - (DATA DOWN)” button so that the blue vector is 346.
7) Be sure to press the “START/STOP (CONFIRM)” button to memorize setting.
8) The OSD shows “OK!”.



5-2-3 EVF Adjustment

Note : From this point forward, the structure of every adjustment is as follows.

Step	Adjustment Item
1. Mode and input signal/ alignment tape 2. Test point and ADJ. part 3. Result and Remarks	ADJ. point → Test point ⇢

1. AFC

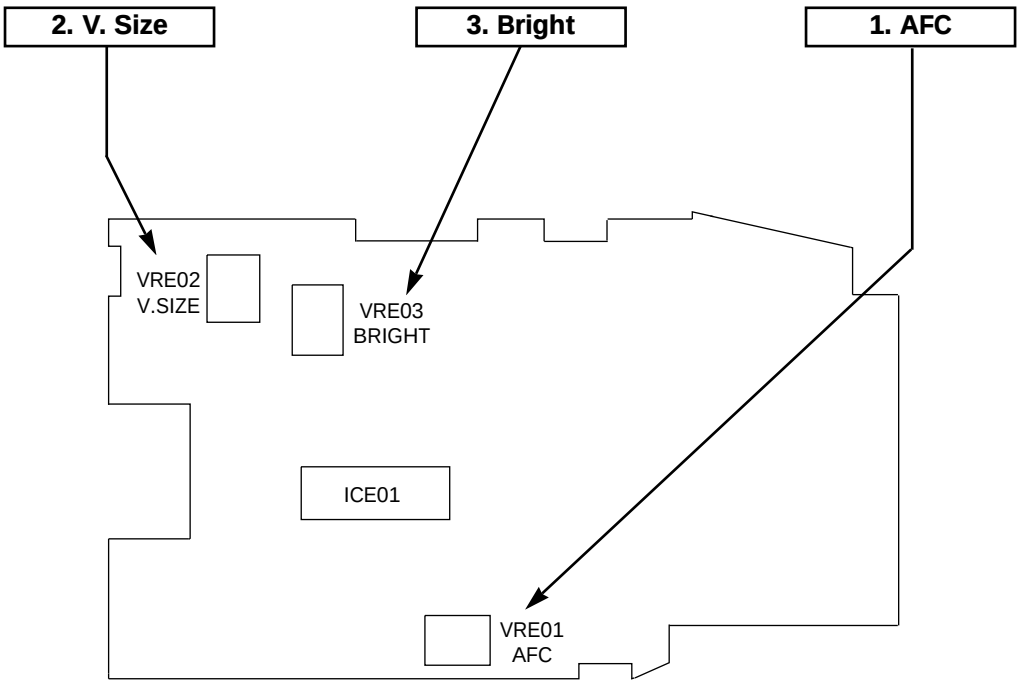
1) VCR "PB", Alignment tape (Lion pattern).
2) TP1 and VRE01.
3) Connect digital voltmeter probe to TP1.
4) Adjust VRE01 so that the voltage is DC 2.5V ± 0.1V.

2. V. Size

1) VCR "PB", Alignment tape (Lion pattern).
2) Viewfinder and VRE02.
3) Adjust VRE02 so that the counter circle on the lion pattern is perfect by round.

3. Bright

1) VCR "PB", Alignment tape (Lion pattern).
2) Viewfinder and VRE03.
3) Adjust the VRE03 so that the 3rd and 4th steps of the lion pattern can be distinguished.



EVF PCB (Component side)

5-2-4 CVF Adjustment

Note :
1. The function buttons on the Rear Board are used to control the CVF adjustment.
2. After each adjustment step is completed, OSD shows "CONFIRM!".
3. EEPROM(ICE02) stores confirmed adjustment value of each adjustment step.
4. After finishing the adjustment, reset the main power source (OFF-ON) to memorize the adjustment data in EEPROM.

5-2-4 (a) PREPARATION

1. How to get into the CVF adjust mode.

STEP 1

1. Remove RE51 (1.5 kohm) and place a jumper or solder land (two point) on the CVF PCB.
2. After adjustment is completed, reinstall RE51 to its original position. See the below figure for the location of RE51

STEP 2

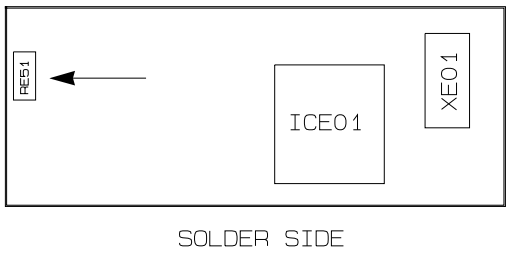
1. Connect the power source (battery/DC cable).
2. Set the CAMERA/VCR switch of the camcorder to "VCR" position.
3. Set OSD on state.
4. Press and hold the "EJECT" button and "STOP" button on the camcorder at the same time for more than 3 seconds. Then unit goes into service mode.

STEP 3

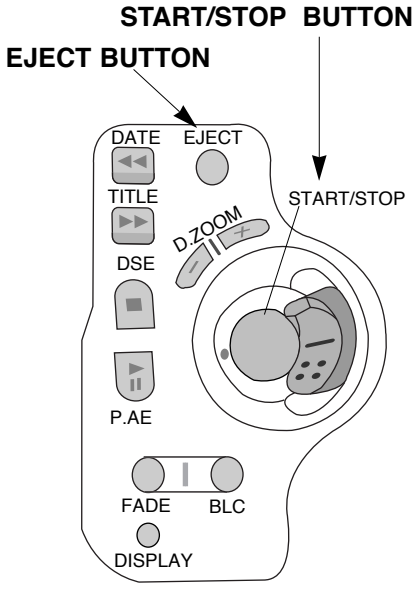
On screen display show "8. PLL EPR:XX EVR:XX" CAMERA ADJUSTMENT mode has successfully been activated.

OSD → CVF
8. PLL
EPR:XX EVR:XX

Note : When "XX XX" is shown in service adjustment precedures, this indicates variable values.



<The location of RE51>

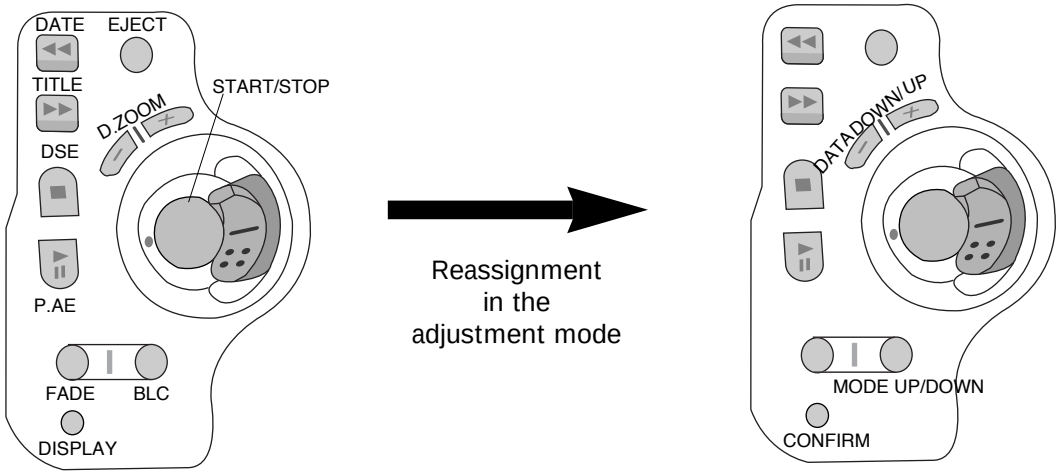


2. The following is a chart explaining the use of each button. In service adjustment mode, button names are different from those in customer camera function control mode. EX) DISPLAY button is the same as confirm.

Using Button	Adjustment
DISPLAY (CONFIRM)	Data store after finishing adjustment by DATA UP/DOWN button.
D. ZOOM - (DATA DOWN) D. ZOOM + (DATA UP)	When changing data value of adjust state.
BLC (MODE UP / DOWN)	Mode change.

Rear Board for camcorder adjustment

Figure of button placement when Rear Board is used for service adjustment.



ADDRESS	MODE	EPR	EVR	MEAN	REMARK
0	TINT	XX	XX	TINT	ADJUST
1	COLOR	XX	XX	COLOR GAIN	ADJUST
2	BRIGHT	XX	XX	BRIGHT	ADJUST
3	CONTRAST	60	60	CONTRAST	FIXED
4	R SUB	XX	XX	R-BRIGHT	ADJUST
5	B SUB	XX	XX	B-BRIGHT	ADJUST
6	GAMMA 1	75	75	GAMMA1 GAIN	FIXED
7	GAMMA 2	B1	B1	GAMMA2 GAIN	FIXED
8	PLL	XX	XX	PLL	ADJUST
9	MODE1	02	02	HD-TIME DELAY	FIXED
A	MODE2	00	00	SYSTEM SELECTION	FIXED
B	MODE3	15	15	H-POSITION	FIXED

Note : "XX XX" indicates variable values.

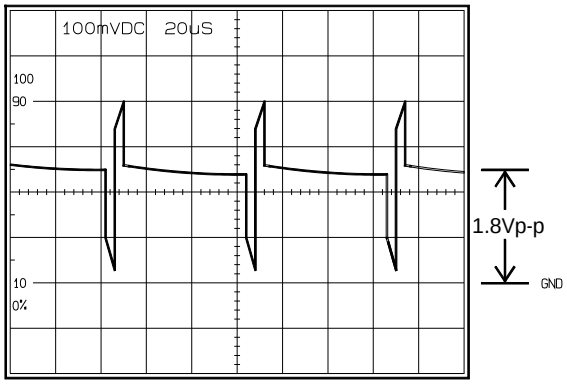
5-2-4 (b) ADJUSTMENT

Note : 1. From this point forward, the structure of every adjustment is as follows.
2. See page 5-24 for the location of test points and adjustments.

Step	Adjustment Item
1. Mode and input signal/ alignment tape 2. Test point and ADJ. part 3. Result and Remarks	ADJ. point → Test point

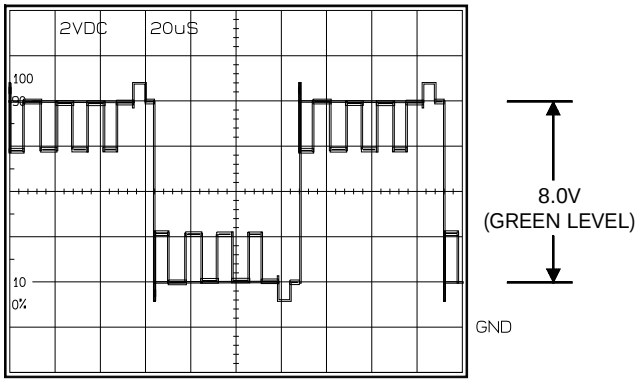
1. PLL

1) VCR "PB", Color bar (SP).
2) RPD and EVR.
3) Connect oscilloscope probe to RPD.
4) Press the "BLC (MODE UP/DOWN)" button so that the OSD state is "08 PLL EPR:XX EVR:XX".
5) Adjust the "D.ZOOM+/- (DATA UP/DOWN)" button so that RPD level is DC1.8 ± 0.1Vp-p.
6) Be sure to press the "DISPLAY(CONFIRM)" button to memorize setting.
7) The OSD shows "CONFIRM !".



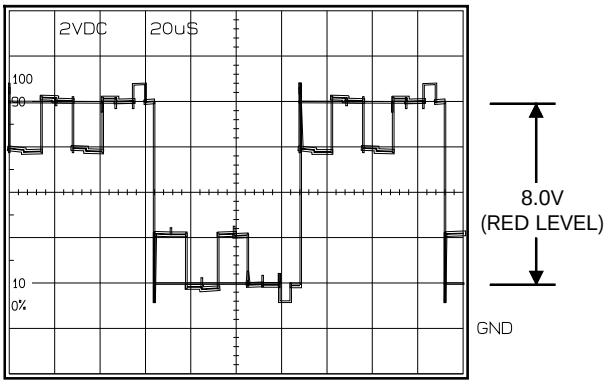
2. Brightness

1) VCR "PB", Color bar (SP).
2) G-OUT and EVR.
3) Connect an oscilloscope probe to G-OUT.
4) Press the "BLC (MODE UP/DOWN)" button so that the OSD state is "02 BRIGHT EPR:XX EVR:XX".
5) Adjust the "D.ZOOM+/- (DATA UP/DOWN)" button so that bright(Green) level is 8.0Vp-p.
6) Be sure to press the "DISPLAY(CONFIRM)" button to memorize setting.
7) The OSD shows "CONFIRM !".



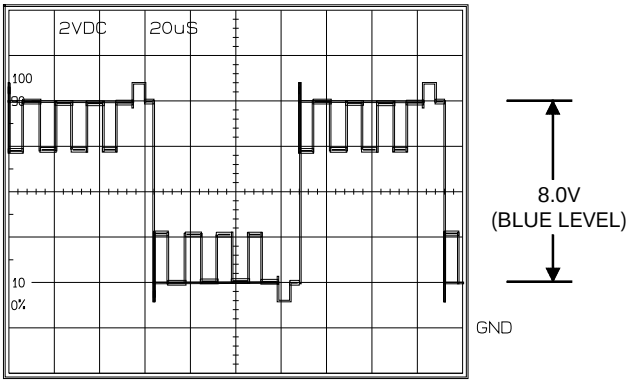
3. R-Sub Brighness

1) VCR "PB", Color bar (SP).
2) R-OUT and EVR.
3) Connect an oscilloscope probe to R-OUT.
4) Press the "BLC (MODE UP/DOWN)" button so that the OSD state is "04 R SUB EPR:XX EVR:XX".
5) Adjust the "D.ZOOM+/- (DATA UP/DOWN)" button so that R-OUT(Red) level is 8.0Vp-p.
6) Be sure to press the "DISPLAY(CONFIRM)" button to memorize setting.
7) The OSD shows "CONFIRM !".



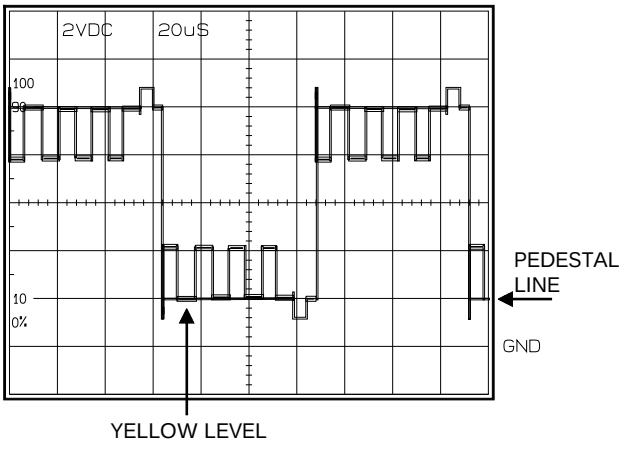
4. B-Sub Brightness

1) VCR “PB”, Color bar (SP).
2) B-OUT and EVR.
3) Connect an oscilloscope probe to B-OUT.
4) Press the “BLC (MODE UP/DOWN)” button so that the OSD state is “05 B BUB EPR:XX EVR:XX”.
5) Adjust the “D.ZOOM+/- (DATA UP/DOWN)” button so that B OUT(Blue) level is 8.0Vp-p.
6) Be sure to press the “DISPLAY(CONFIRM)” button to memorize setting.
7) The OSD shows “CONFIRM !”.



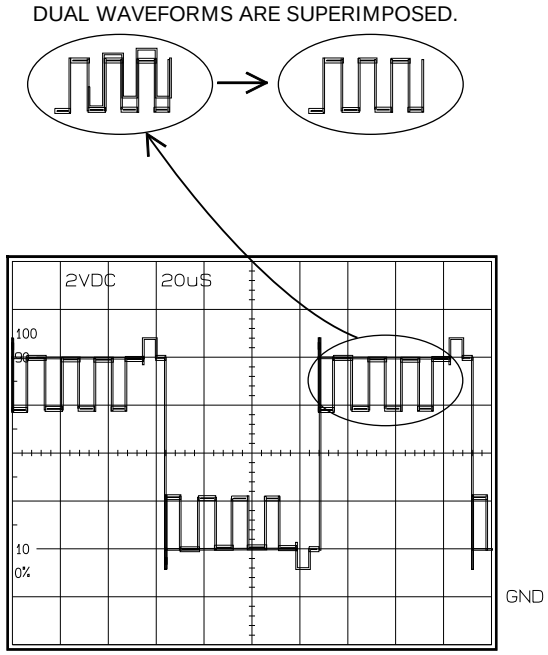
5. Color

1) VCR “PB”, Color bar (SP).
2) B-OUT and EVR.
3) Connect an oscilloscope probe to B-OUT.
4) Press the “BLC (MODE UP/DOWN)” button so that the OSD state is “01 COLOR EPR:XX EVR:XX”.
5) Adjust the “D.ZOOM+/- (DATA UP/DOWN)” button so that the Yellow level is equal to the pedestal line.
6) Be sure to press the “DISPLAY(CONFIRM)” button to memorize setting.
7) The OSD shows “CONFIRM !”.



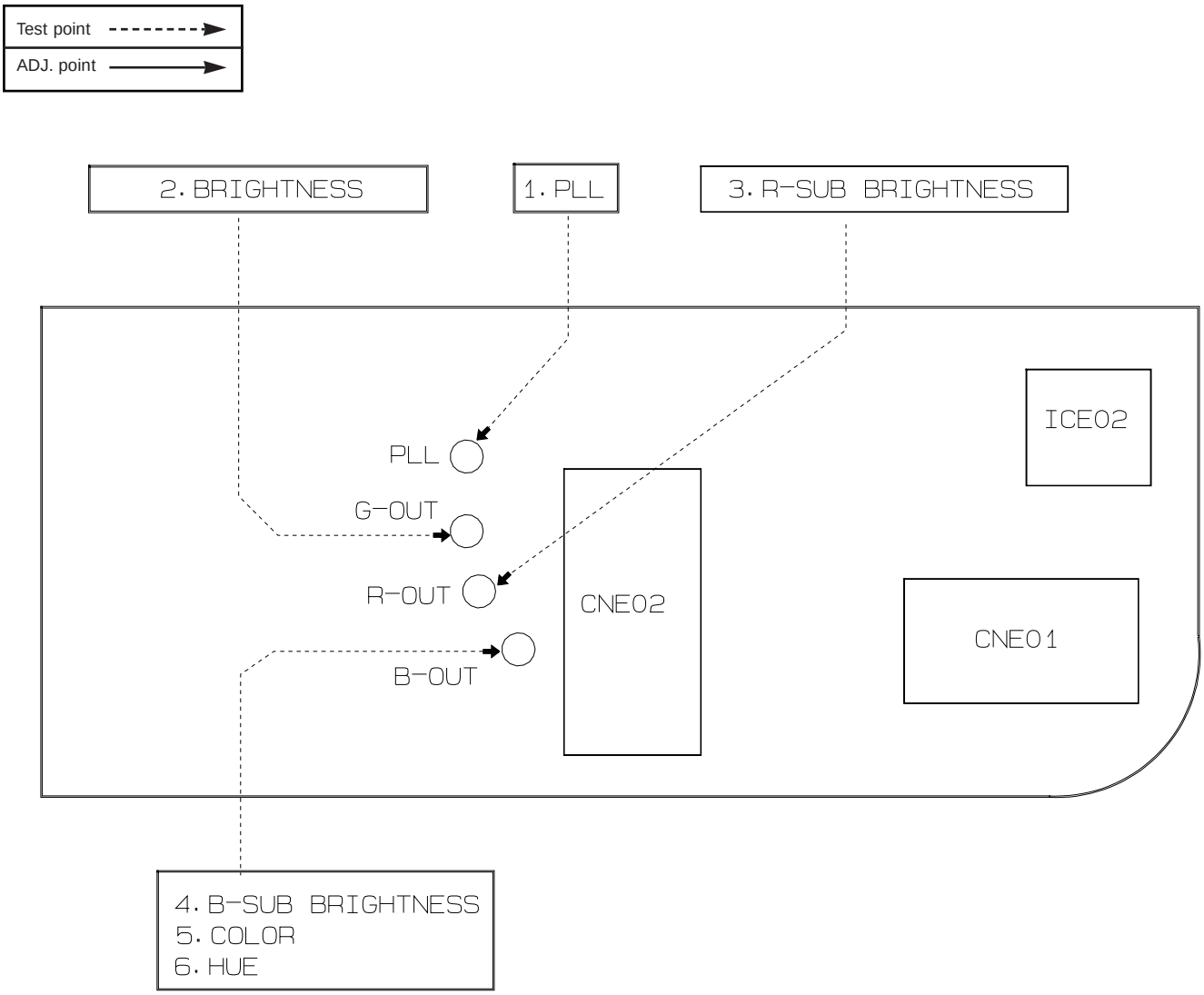
6. HUE

1) VCR “PB”, Color bar (SP).
2) B-OUT and EVR.
3) Connect an oscilloscope probe to B-OUT.
4) Press the “BLC (MODE UP/DOWN)” button so that the OSD state is “00 TINT EPR:XX EVR:XX”.
5) Adjust the “D.ZOOM+/- (DATA UP/DOWN)” button so that the dual waveforms are superimposed.
6) Be sure to press the “DISPLAY(CONFIRM)” button to memorize setting.
7) The OSD shows “CONFIRM !”.



◆ Test point and adjustment points :

NO	ADDRESS	Adjustment name	Test point	Adjustment point	Spec.
1	08	PLL	PLL	EVR	1.8 ± 0.1V DC
2	02	BRIGHTNESS	G-OUT	EVR	8.0Vp-p
3	04	R-SUB BRIGHTNESS	R-OUT	EVR	8.0Vp-p
4	05	B-SUB BRIGHTNESS	B-OUT	EVR	8.0Vp-p
5	01	COLOR	B-OUT	EVR	-
6	00	HUE	B-OUT	EVR	-



CVF PCB (Component side)

5-3 VCR Section Adjustment

5-3-1 Preparations

1. Equipment :

1) Monitor TV.
2) Dual trace oscilloscope of over 20MHz band, incorporates delay mode.
   (Use 10 : 1 probe unless otherwise specified.)
3) Frequency counter
4) Pattern generator with video output terminal.
5) Digital voltmeter.
6) DC power supply.
7) Alignment tape (Color bar : SP)

2. Composition of VCR PCBoards

1) Main PCB (system control/servo, video, audio,DC/DC converter, camera)
2) Rear PCB
3) Battery-Terminal PCB
4) Front PCB

3. Set-up during adjustment
Since the video output signal obtained from the pattern generator is used as the adjusting signal for the VCR block, it is necessary that this video output signal be within the required specifications. Connect an oscilloscope to video input jack and make sure that the amplitude of the video SYNC signal is approximately 0.3V, that the video block amplitude is approximately 0.7V, that the burst signal amplitudeis approximately 0.3V with fiat characterics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66.
The video signal (color bars) used for VCR block electrical adjustment are shown in figure 1.

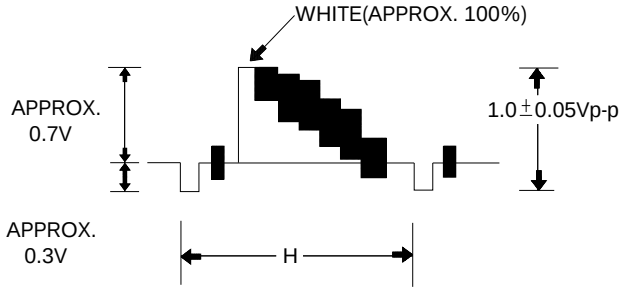


Fig. 1 Color bar signal pattern generator

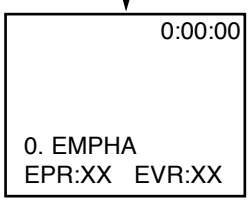
4. How to get into srvice "**ADJUST**" mode

STEP 1

1. Connect the power source (battery/DC cable).
2. Set the knob-power of the camcorder to VCR position.
3. Press the "EJECT" button to eject mode.

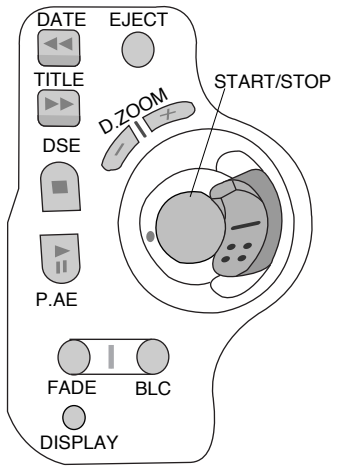
STEP 2

1. Press and hold "EJECT" button and "DATE" button on the REAR board at the same time for more than 5 seconds.
2. If OSD Shows like the figure below, VCR adjustment mode has been successfully activated.
3. Insert tape into housing assy and then perform the adjustments.



5. The location of function button.

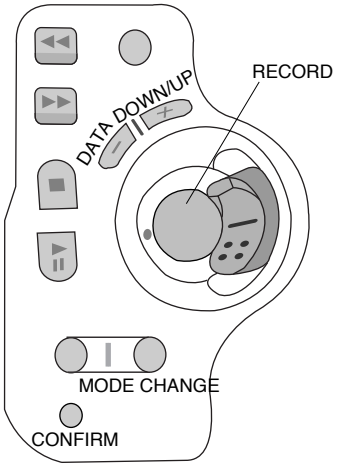
Rear Board for camcorder adjustment



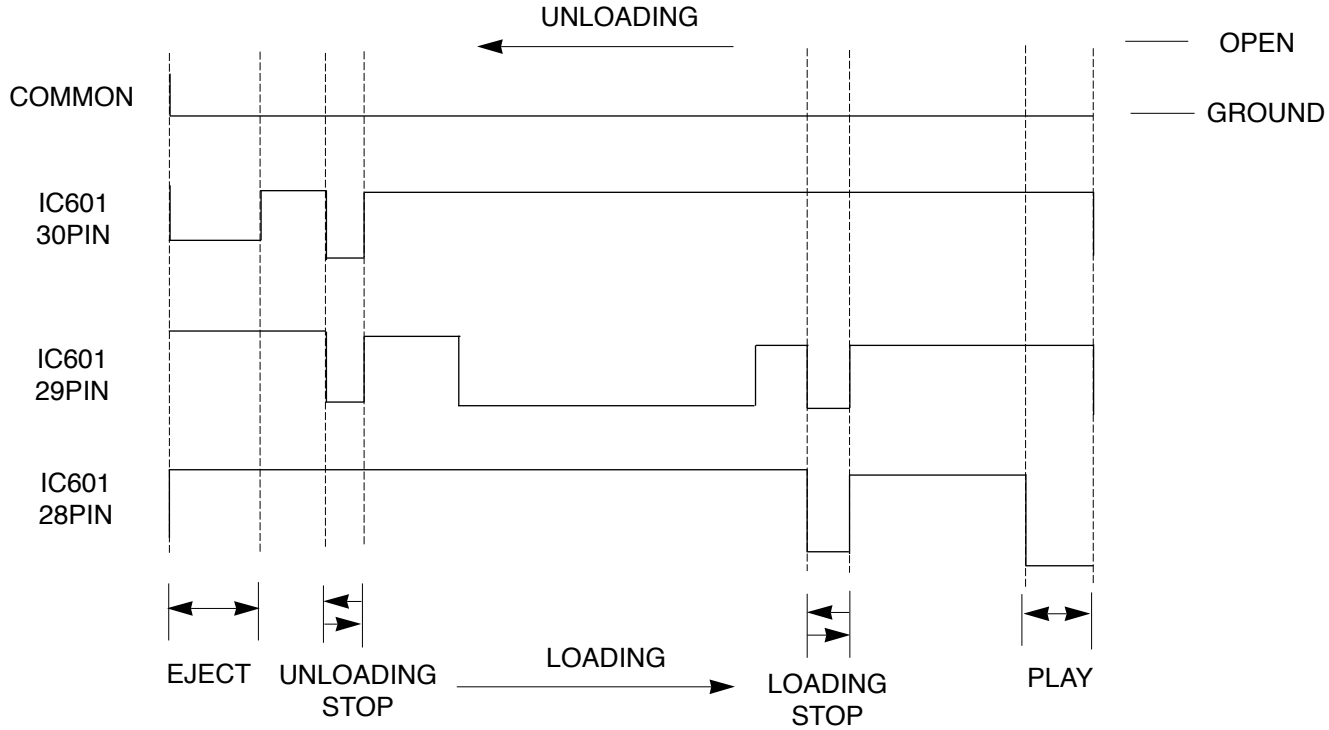
Reassignment in the adjustment mode

Note : In service adjustment mode, button names are different from those in customer function control mode. EX) DISPLAY button is the same as CONFIRM.

Figure of button placement when Rear Board is used for service adjustment.



5-3-2 Timing Chart of Program SWITCH



POSITION	IC601 30PIN	IC601 29PIN	IC601 28PIN	Action Mode
EJECT	L	H	H	EJECT
UNLOADING STOP	L	L	H	UNLOADING STOP
LOADING STOP	H	L	L	LOADING STOP
PB	H	H	L	PLAY,FF,REW,STILL...

5-3-3 VCR Section

Note 1 : From now on, the structure of every adjustment is as follows.

Step	Adjustment Item
1. Mode and input signal/ alignment tape 2. Test point and ADJ. part 3. Result and Remarks	ADJ. point → Test point

Note 2 : How to connect video in/out signal

- Connect the video cable to pattern generator and ass'y A/V Jack, so that video in/out signal is adjusted automatically as shown below (Fig.2).

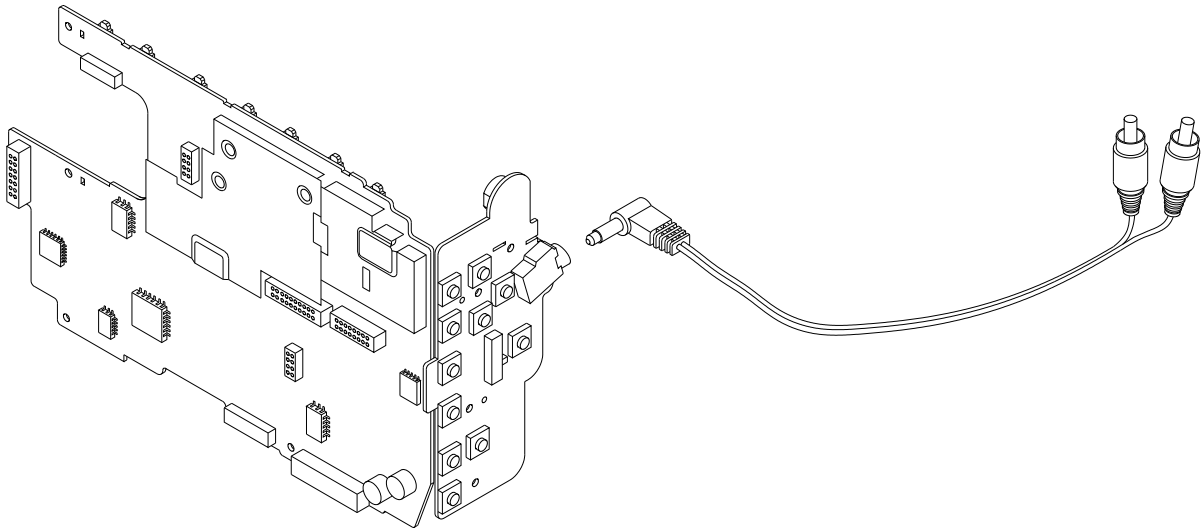


Fig. 2 Video Signal Connection

Note 3 : How to record - Press the "START/STOP" button (Red button) on the Rear board in the adjustment mode.

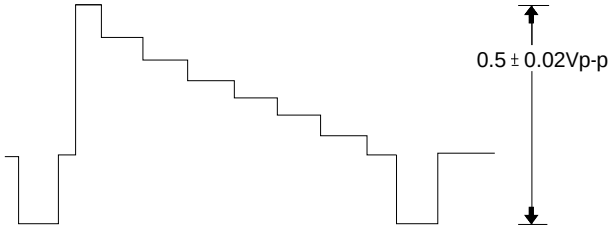
Note 4 : 1. Video block - See page 5-30 for the location of tests points and adjustments.
Audio block - See page 5-31 for the location of tests points and adjustments.
2. Press the "BLC" button of set for mode change.

Note 5 : The OSD information.
"XX" means arbitary values. It can be different number depend on the condition.

```
0. EMPHA
EPR:XX   EVR:XX
```

0. Y-EMPHASIS (Video block)

1) Rec, 100% color bar signal.
2) TP201 and EVR.
3) Confirm the "0. Y-EMPHASIS" mode by pressing the "BLC" (MODE CHANGE) button of unit.
4) Connect an oscilloscope to TP201.
5) Press the "- (DATA DOWN)/ + (DATA UP)" button so that the TP201 is 0.5 ± 0.02Vp-p from SYNC tip to peak level.
6) Be sure to press the "DISPLAY (CONFIRM)" button on unit to memorize setting.



1. "Y-SEP" Adjustment is fixed to EVR data 74.

2. Y-FM Carrier Frequency (Video block)

1) Rec, no signal input
2) TP203 and EVR
3) Confirm the "5. CARR" mode by pressing the "BLC" (MODE CHANGE) button of unit.
4) Connect frequency counter probe to TP203.
5) Press the "- (DATA DOWN)/ + (DATA UP)" button so that the TP203 is 4.38 ± 0.02MHz.
6) Be sure to press the "DISPLAY (CONFIRM)" button on unit to memorize setting.

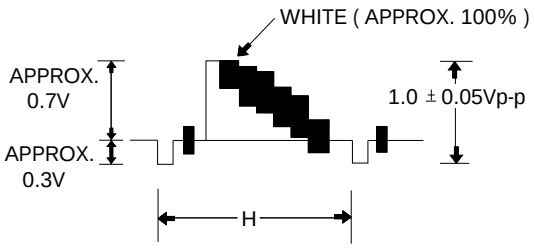
3. Y-FM Deviation (Video block)

Note : Confirm that "Y-FM Carrier Frequency" and "PB Output Level" adjustment have been completed.

1) Rec PB, 100% color bar signal.
2) TP203 and EVR.
3) Record the color bar signal at adjustment mode.
4) Turn power off/on and then playback the recorded signal.
5) Confirm the playback output of TP203. (Specified value: 1.0 ± 0.05Vp-p)
6) If the specified value is not satisfied, repeat above three steps.

- When larger than specified value : press the "+ (DATA UP)" and then press the "DISPLAY (CONFIRM)" button.

- When smaller than specified value : press the "- (DATA DOWN)" and then press the "DISPLAY (CONFIRM)" button.

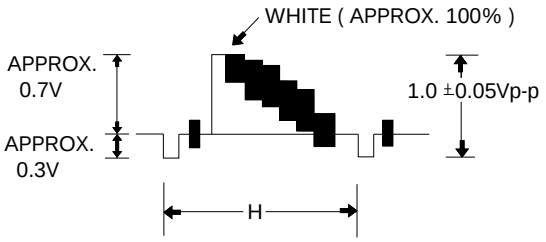


4. REC Y Level (Video block)

"4. REC Y" Adjustment is fixed to EVR data B9.

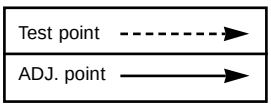
5. PB Output Level (Video block)

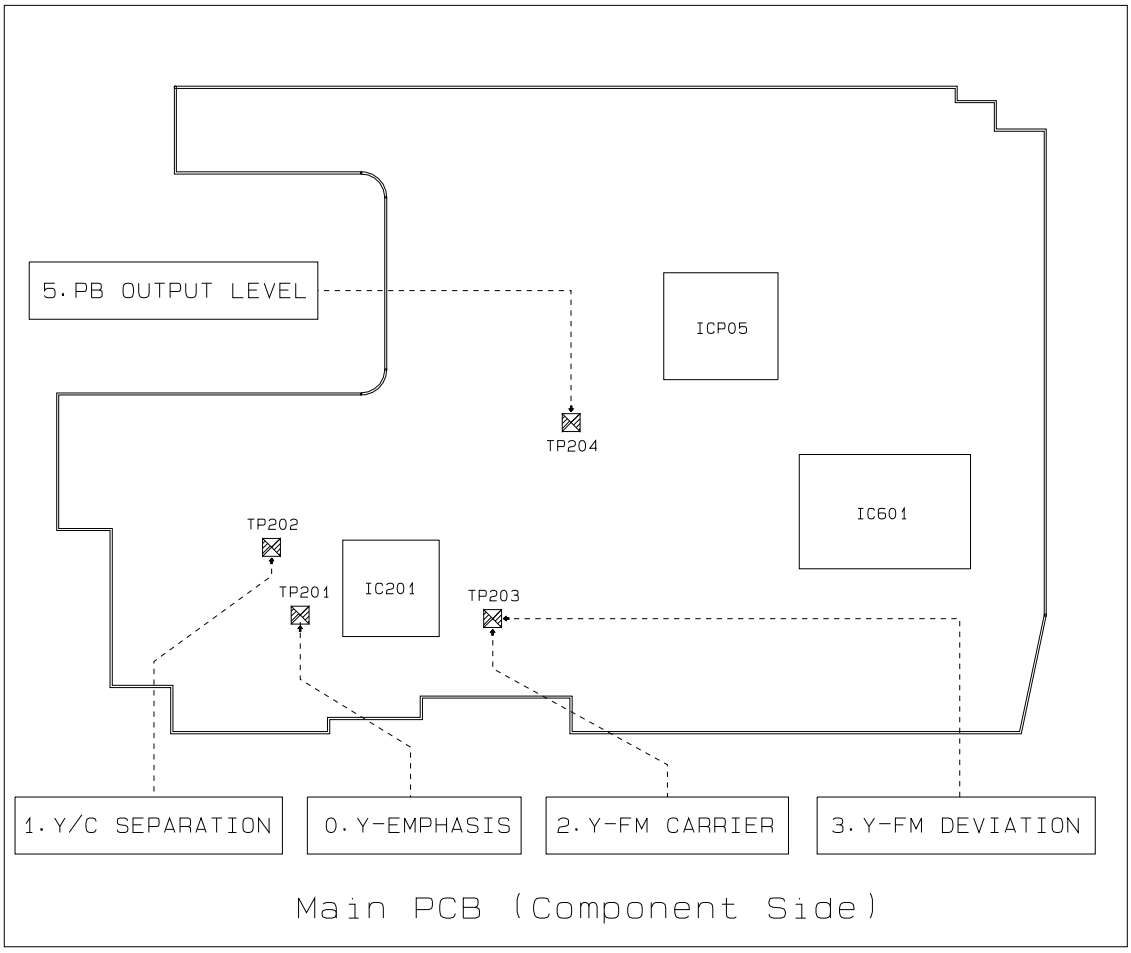
1) PB, color bar tape.
2) TP204 and EVR.
3) Confirm the "5. PB Y" mode by pressing the "BLC" (MODE CHANGE) button of unit.
4) Connect an oscilloscope to TP204.
5) Press the "- (DATA DOWN)/+ (DATA UP)" button so that the TP204 is 1.0 ± 0.05Vp-p from SYNC to peak level.
6) Be sure to press the "DISPLAY (CONFIRM)" button on unit to memorize setting.



◆ Test point and adjustment points :

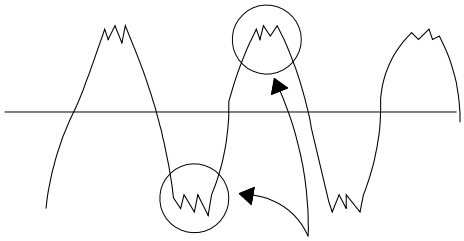
NO	ADDRESS	Adjustment name	Test point	Adjustmen
0	Y-EMPHASIS	TP201	EVR	0.5 ± 0.02Vp-p
1	Y/C SEPARATION	TP202	EVR data fixed	74
2	Y-FM CARRIER FREQUENCY	TP203	EVR	4.38 ± 0.02MHz
3	Y-FM DEVIATION	TP203	EVR	1.0 ± 0.05Vp-p
4	REC Y LEVEL	-	EVR data fixed	B9
5	PB OUTPUT LEVEL	TP204	EVR	1.0 ± 0.05Vp-p



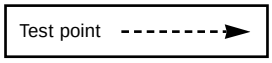


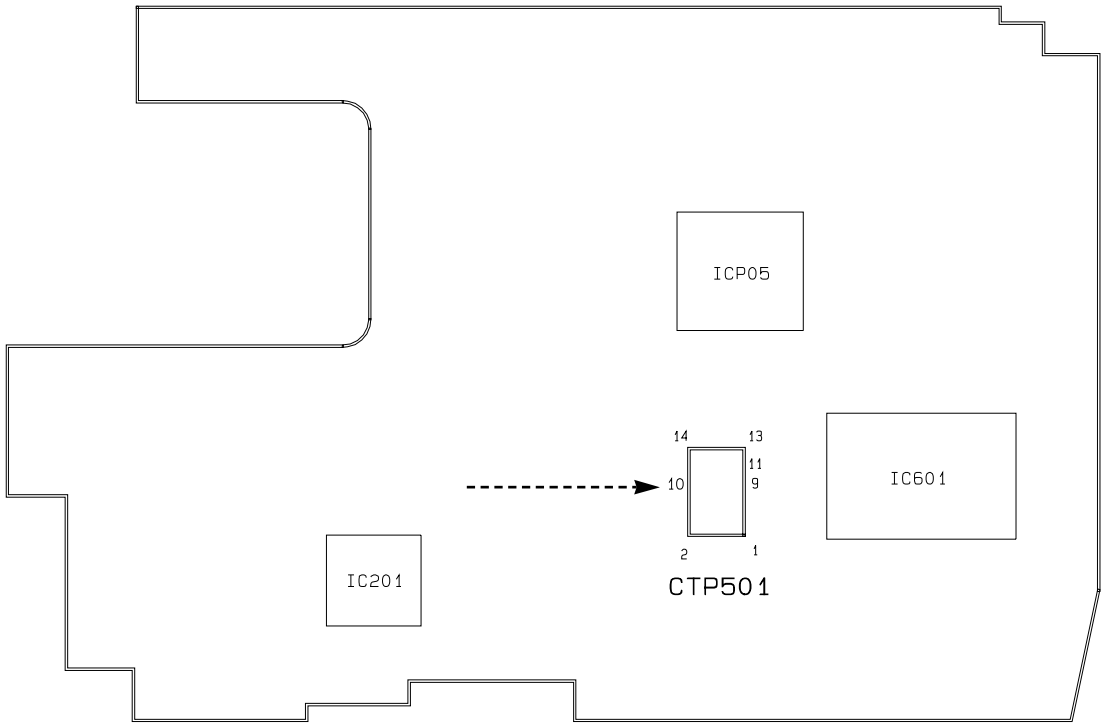
6. Audio BPF (Audio block)

1) PB, color bar tape.
2) Pin 10 of CTP501 and EVR.
3) Confirm the “A. AUDIO BPF” mode by pressing the “BLC” (mode change) button on UNIT.
4) Connect an oscilloscope to pin 10 of CTP501.
5) Press the “- (DATA DOWN)/ +(DATA UP)” button so that the output waveform is completed sine wave and the distortion is miniized.
6) Be sure to Press the “DISPLAY(CONFIRM)” button on unit to memorize setting.



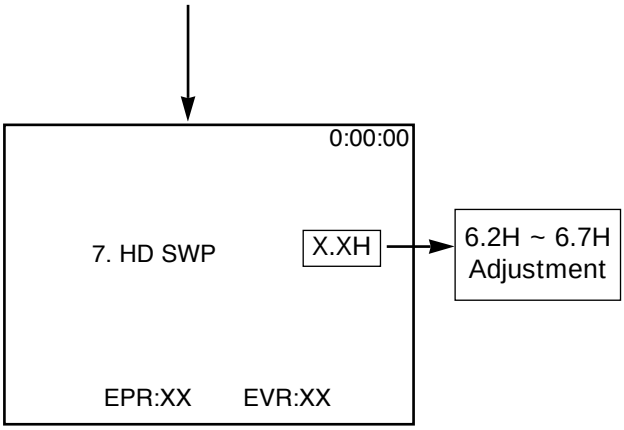
AUDIO OUTPUT
DISTORTION MINIMIZE





7. Head Switching

1) PB, color bar tape.
2) EVR.
3) Confirm the “7. HD SWP” mode by pressing the “BLC“ (MODE CHANGE) button of unit.
4) The data of Head S/W is set to 6.2H ~ 6.7H automatically.
5) Be sure to press the “DISPLAY (CONFIRM)” button on unit to memorize setting.



(EVF/CVF or TV OSD)

8. Model set

1) PB, color bar tape.
2) EVR.
3) Confirm the “8. MODEL” mode by pressing the “BLC“ (MODE CHANGE) button of unit.
4) Press the “- (DATA DOWN)/+(DATA UP)” button so that OSD shows “EPR:XX EVR:XX”. “XX” is different depend on the models as shown below.

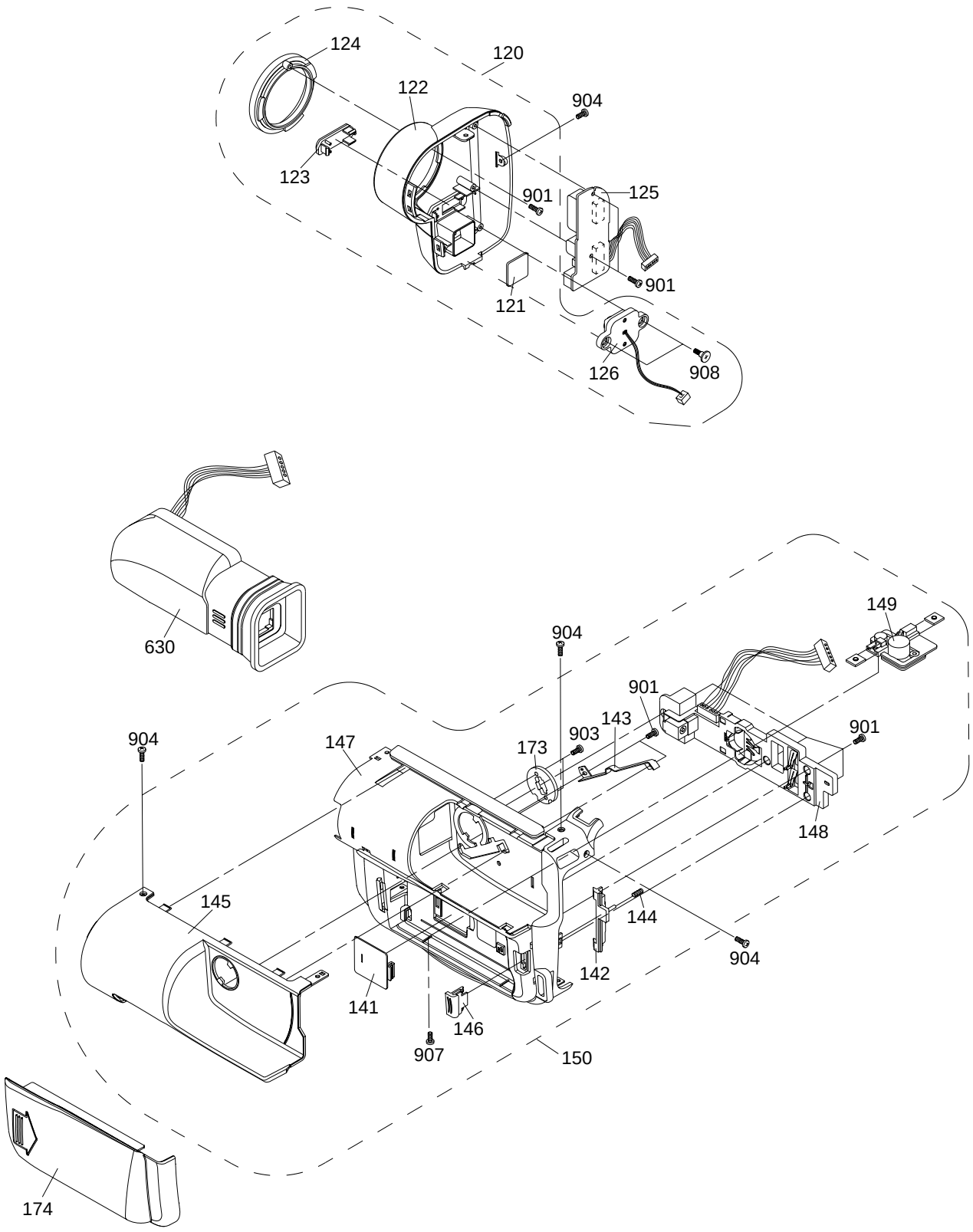
NTSC	PAL
- SCA20 : 20	- VP-A20 : 20
- SCA23 : 23	- VP-A22 : 22
- SCA25 : 25	- VP-A23 : 23
	- VP-A21 : 20

5) Be sure to press the “DISPLAY (CONFIRM)” button on unit to memorize setting.

6. Exploded View and Parts List

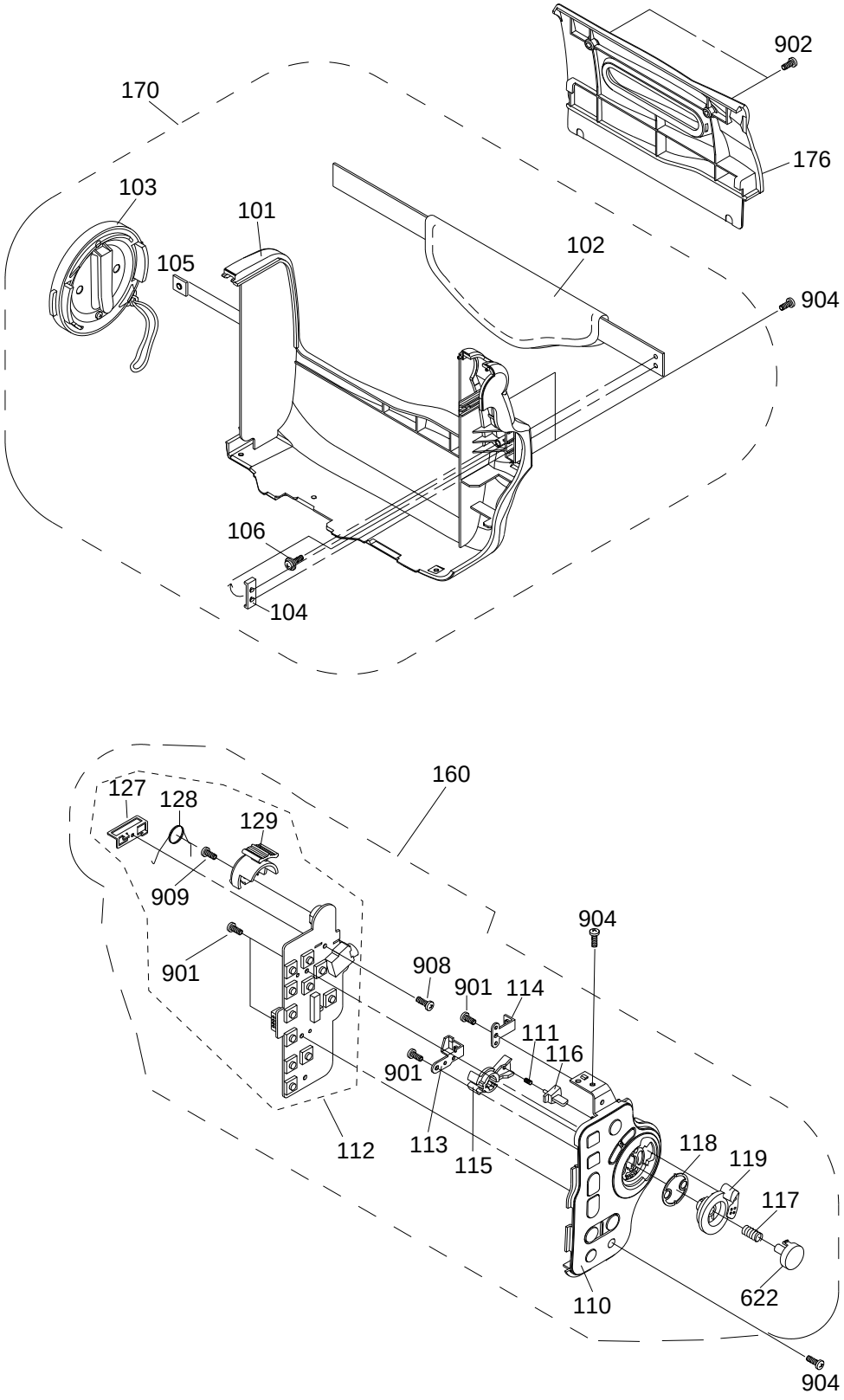
		Page
6-1	Cabinet Assembly (1)	6-2
6-2	Cabinet Assembly (2)	6-4
6-3	Cabinet Assembly (3)	6-6
6-4	Mechanical Parts (1)	6-8
6-5	Mechanical Parts (2)	6-10
6-6	Mechanical Parts (3)	6-12
6-7	EVF (VP-A20/A22)	6-14
6-8	CVF (VP-A21/A23)	6-16

6-1 Cabinet Assembly (1)



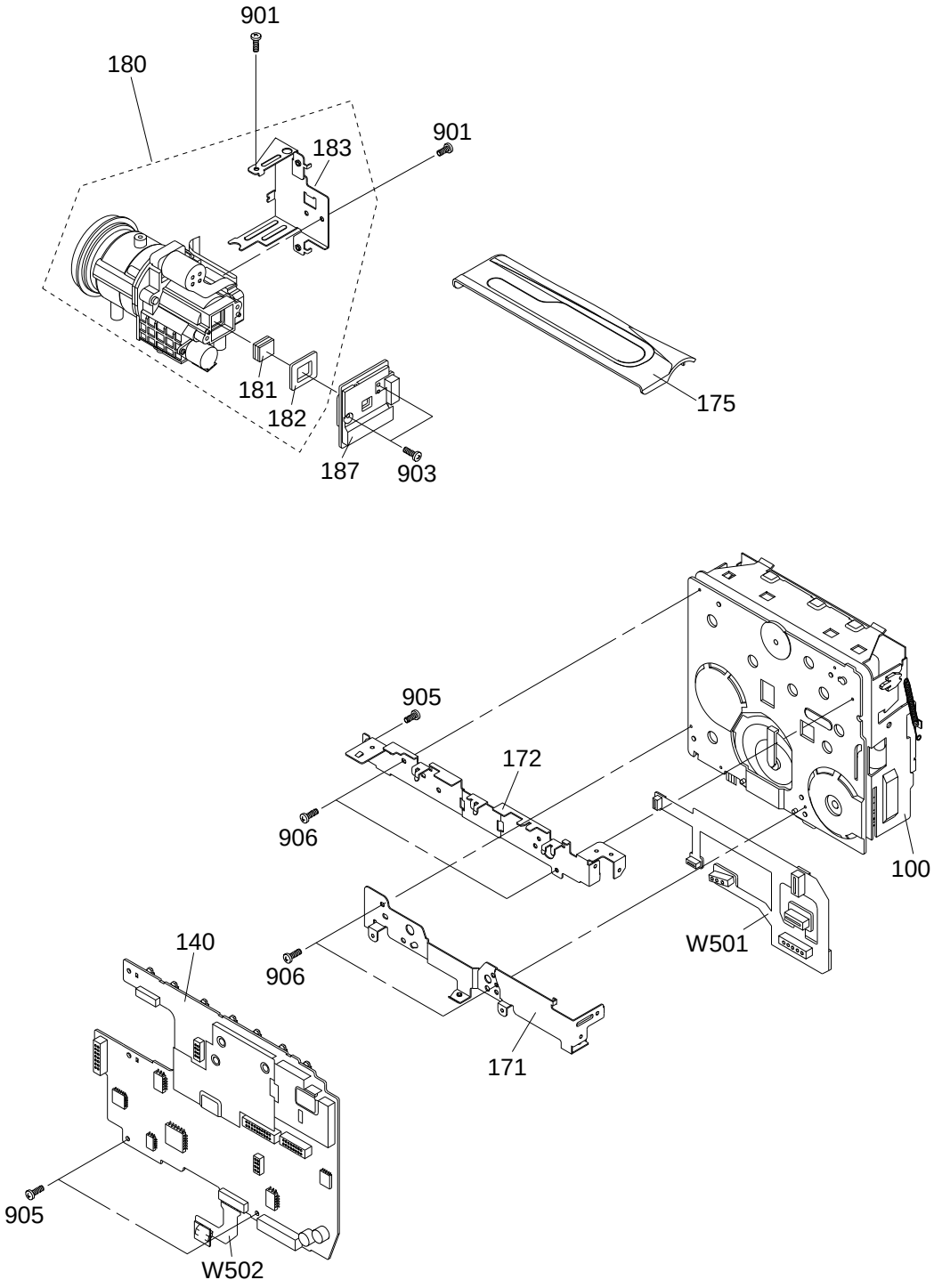
Loc. No	New Part No	Description and Specification	Remark
120	AD98-11242D	ASSY-CASE FRONT;VP-A20,-	VP-A20/A21
120	AD98-11250J	ASSY-CASE FRONT;VP-A22,-	VP-A22
120	AD98-11250H	ASSY-CASE FRONT;VP-A23,-	VP-A23
121	AD63-70068A	SHEET-MIC;-,HIMERON,-,-,-,-,-,VP-A20	
122	AD64-30930A	CASE-FRONT;-,ABS,94HB,-,-,-,-,VP-A20	VP-A20/A21
122	AD64-30930C	CASE-FRONT;-,ABS,94V0,-,-,-,-,SC-A20	VP-A22
122	AD64-30930B	CASE-FRONT;-,ABS,94HB,-,-,-,-,VP-A23	VP-A23
123	AD64-40676A	WINDOW-REMOCON;-,PC,-,-,BLK,-,VP-A20	
124	AD67-10191A	LENS-HOOD;-,-,PC(BLK),-,-,-,VP-A20	
125	AD90-10830Z	ASSY-FRONT BOARD;VP-A20,FRONT(MOD)	VP-A20/A21/A23
125	AD90-10831A	ASSY-FRONT BOARD;VP-A22,FRONT(MOD-GYRO)	VP-A22
126	AD98-12024P	ASSY-MIC;VP-A20,-	
141	AC63-30040A	COVER-LI BATTERY;PP,HB,T1.5,BLK,H3.5,-,V	
142	AD61-30214A	LOCKER-BATT EJECT;-,POM,-,BLK,-,VP-A20	
143	AD61-60532A	SPRING-EVF;-,-,BE-CU,-,-,-,VP-A57	
144	AD61-60540A	SPRING-HOLDER;-,-,SUS 304,-,-,-,CS97	
145	AD63-30568A	COVER-LEFT;-,ABS94,HB,-,-,-,-,VP-A20	
146	AD64-10847A	KNOB-BATT EJECT;-,ABS94,HB,-,-,VP-A20	
147	AD64-30932A	CASE-LEFT;-,ABS94,HB,-,-,-,-,VP-A20	
148	AD90-10822G	ASSY-TERMINAL;A2-P/J,SAMSUNG	
149	AD98-12025D	ASSY-BASE TRIPOD;VP-A20,BLK	
150	AD98-11242C	ASSY-CASE LEFT;VP-A20,-	
173	AD61-20976A	HOLDER-EVF;-,POM,-,BLK,-,VP-A57	
174	AD63-30567A	COVER-BATTERY;-,ABS94,HB,-,-,-,-,-	
630	AD90-10824G	ASSY-EVF;A2-PJ,PAL	VP-A20
630	AD90-10831F	ASSY-EVF;VP-A22/XEU,EIS,32X,EVF	VP-A22
630	AD90-10831G	ASSY-CVF;VP-A23/XEU,64X,CVF	VP-A23
630	AD90-10839V	ASSY-CVF;VP-A21	VP-A21
901	AC60-10055A	SCREW-TAPPING;BH,+,-,M2,X4,FZB	
903	AC60-10054A	SCREW-TAPPING;BH,+,-,M2,X6,FZB	
904	AC60-10020A	SCREW-MACHINE;BH,+,M2,X5,FZB,FE,UP,-,-	
907	AC60-10019A	SCREW-MACHINE;BH,+,M2,X4,FZB,FE,UP,-,-	
908	AC60-12119A	SCREW-TAP TITE;-,BH,+,-,-,SWRCH18A2P4	

6-2 Cabinet Assembly (2)



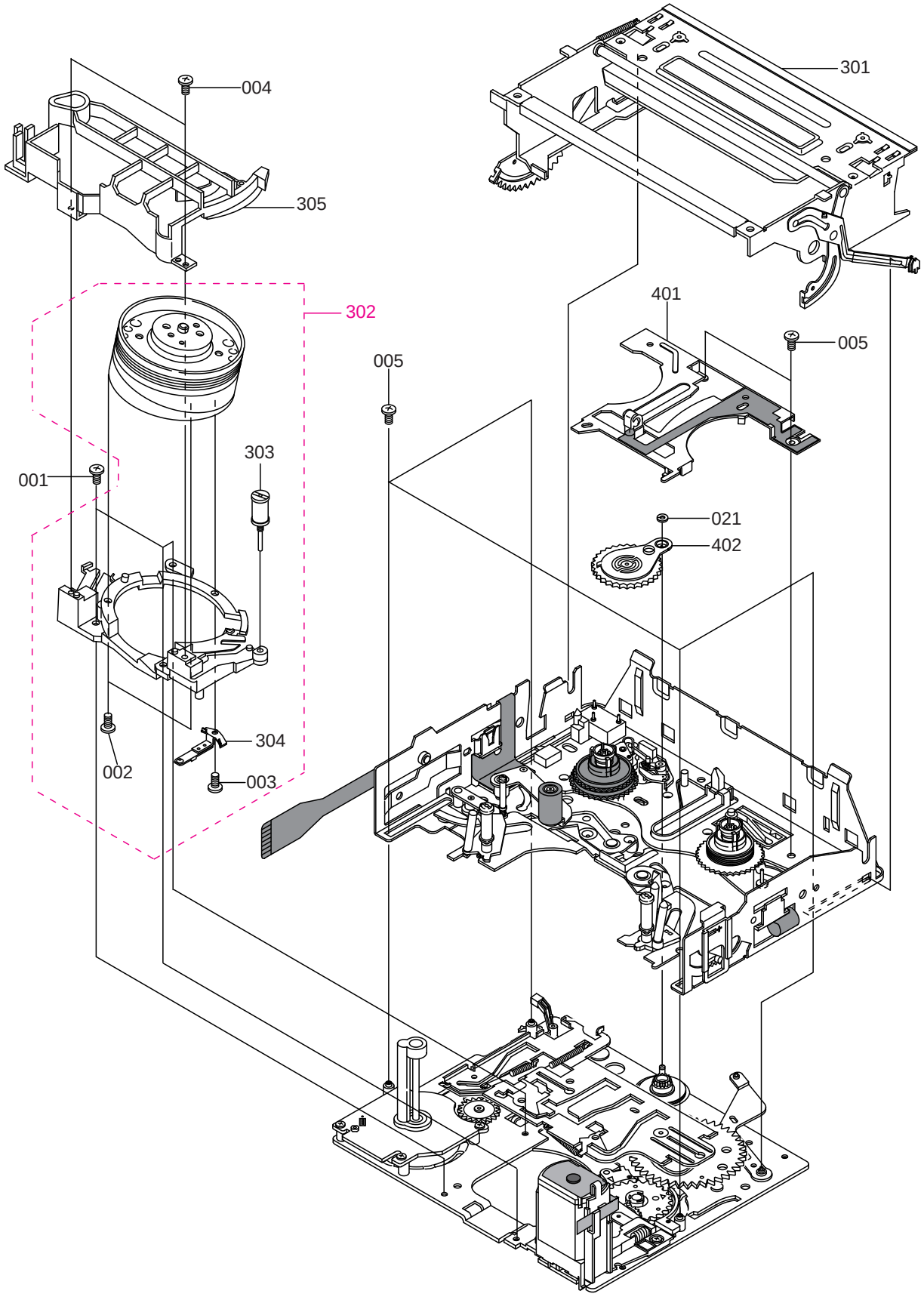
Loc. No	New Part No	Description and Specification	Remark
101	AD64-30935A	CASE-RIGHT;-,ABS94,HB,-,-,-,-,VP-A20	
102	AC63-10007A	GRIP-BELT ASSY;LEATHER,BLK,T1.5,-,SV-H66	
103	AD61-22018A	CAP-HOOD;-,ABS94,HB,-,-,VP-A20	
104	AD61-20977A	HOLDER-GRIP;-,PBT,-,BLK,-,VP-A57	
105	AC61-20223A	HOLDER-LOCK;SECC,T1.0,NAT,-,-,-	
106	AD60-10509A	SCREW-TAP TITE;-,PWH,+,-,M2X5,5,-	
110	AD64-30936A	CASE-REAR;-,ABS94,HB,-,-,-,-,VP-A20	VP-A20/A21
110	AD64-30936D	CASE-REAR;-,ABS94,HB,-,-,-,-,SC-A25	VP-A22
110	AD64-30936C	CASE-REAR;-,ABS94,HB,-,-,-,-,SC-A23	VP-A23
111	66674-641-610	SPRING-KNOB POWER;SUS304 WPB	
112	AD59-10538A	UNIT-REAR;VP-A20,-	
113	AD61-11038A	BRACKET-REAR/RIGHT A;-,SECC,-,T0.6,-,-,V	
114	AD61-11039A	BRACKET-REAR/RIGHT B;-,SECC,-,T0.6,-,-,V	
115	AD61-21087A	HOLDER-POWER;-,POM,-,NTR,-,VP-A20	
116	AD61-40419A	STOPPER-POWER;-,ABS94,HB,-,-,VP-A20	
117	AD61-60521A	SPRING-REC;-,TS,SWPB,0.25,4.3,-,SC-80	
118	AD61-60523A	SPRING-S/S;-,-,SUS304,0.2,-,-,SV-D100	
119	AD64-10843A	KNOB-POWER;-,ABS94,HB,-,-,VP-A20	
127	AD61-22014A	HOLDER-ZOOM;-,ABS94HB,T0.8,-,-,-	
128	AD61-60568A	SPRING-ZOOM;-,-,SUS304,-,D0.55,-,SV-S99	
129	AD64-10844A	KNOB-T/W;-,ABS94,HB,-,-,VP-A20	
160	AD98-12024N	ASSY-CASE REAR;VP-A20,-	VP-A20/A21
160	AD98-12024X	ASSY-CASE REAR;SC-A25,-	VP-A22
160	AD98-12024W	ASSY-CASE REAR;SC-A23,-	VP-A23
170	AD98-11242N	ASSY-CASE RIGHT;VP-A20,-	
176	AD98-11242G	ASSY-COVER HOUSING;VP-A20,-	
622	AD64-11005A	BUTTON-REC;-,ABS94,HB,-,-,VP-A20/SEUK	
901	AC60-10055A	SCREW-TAPPING;BH,+,-,M2,X4,FZB	
902	AD60-10001A	SCREW-MACHINE;BH,B,1.7*5.5,-,FE,BLACK,-,	
904	AC60-10020A	SCREW-MACHINE;BH,+,M2,X5,FZB,FE,UP,-,-	
908	AC60-12119A	SCREW-TAP TITE;-,BH,+,-,-,SWRCH18A2P4	
909	AD60-10510A	SCREW-MACHINE;-,PLAN,+,-,M1.4X5,5,BLK,FE	

6-3 Cabinet Assembly (3)



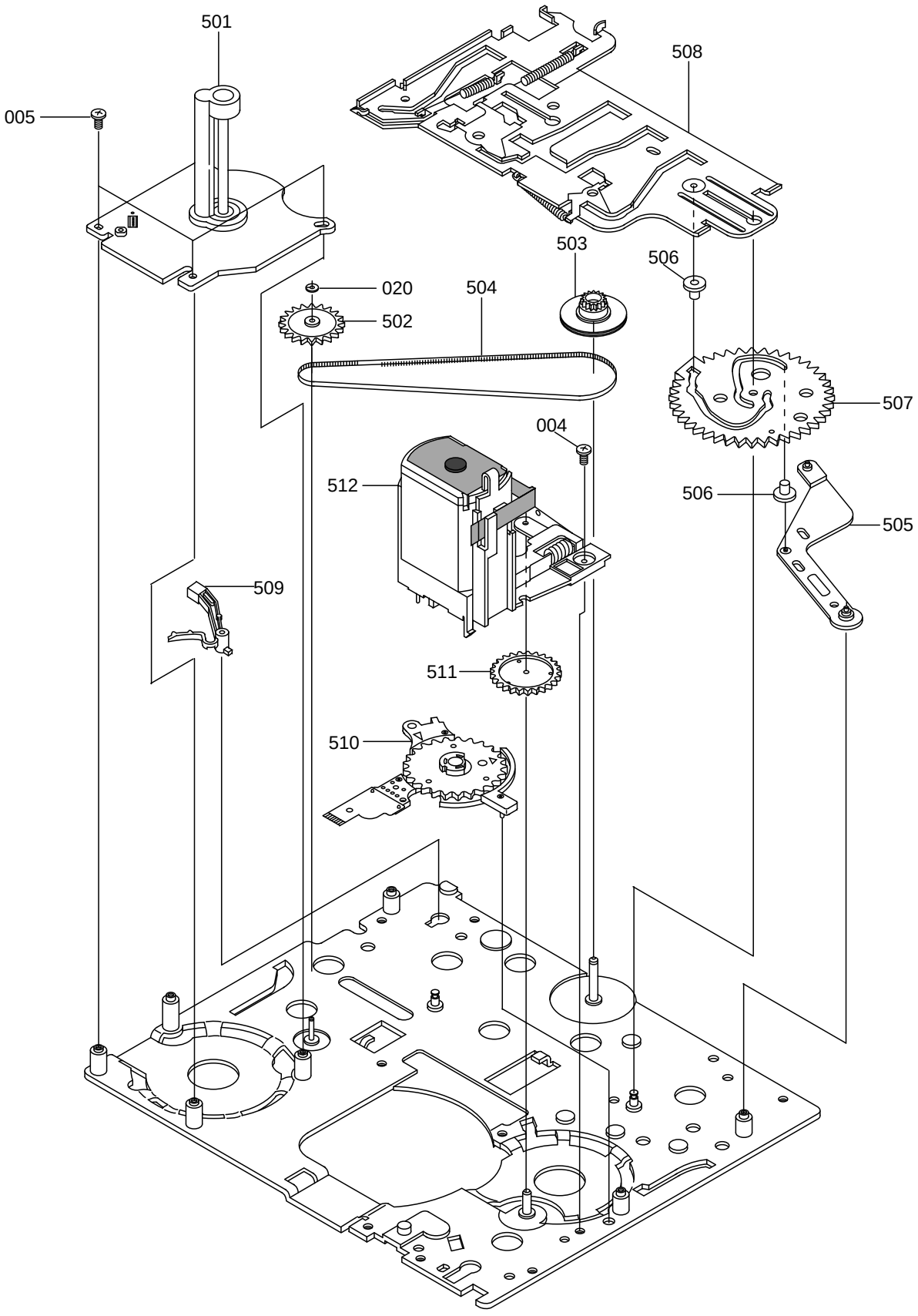
Loc. No	New Part No	Description and Specification	Remark
100	AD96-10473L	ASSY-8MM DECK;DE-6BPN,-	
140	AD90-10823B	ASSY-MAIN BOARD;VP-A20,PAL	VP-A20
140	AD90-10833A	ASSY-MAIN BOARD;VP-A22,PAL	VP-A22
140	AD90-10832Z	ASSY-MAIN BOARD;VP-A23,PAL	VP-A23
140	AD90-10839U	ASSY-MAIN BOARD;VP-A21,PAL	VP-A21
171	AD61-11036A	CHASSIS-BOTTOM;-,STS,-,T0.6,-,-,VP-A20	
172	AD61-11037A	CHASSIS-TOP;-,STS,-,T0.6,-,-,VP-A20	
175	AD98-11242F	ASSY-CASE TOP;VP-A20,-	
180	AD90-10826L	ASSY-LENS;VP-A20/XEU,LENS	
181	AC29-92002D	FILTER-OLP;SV-3C01MM,KSS,-,-	
182	AC63-62007A	SPACER-CCD;SILICON,-,BLK,-,VP-K70,-	
183	AD61-11035A	BRACKET-LENS;-,STS,-,T0.6,-,-,VP-A20	
187	AD90-10824H	ASSY-CCD;A2-PJ,PAL	
901	AC60-10055A	SCREW-TAPPING;BH,+,-,M2,X4,FZB	
903	AC60-10054A	SCREW-TAPPING;BH,+,-,M2,X6,FZB	
905	AC60-10024A	SCREW-MACHINE;BH,+,M2,X3,FZW,FE,-,-,-	
906	AC60-12128A	SCREW-TAP TITE BH;-,BH,4 1.7,I4,-,FE,BLK	
W501	AD90-10832B	ASSY-FPC DECK;VP-A20,DECK	
W502	AD90-10808D	ASSY-FPC PRE-AMP;VP-A57/SEG,VCR-MAIN	

6-4 Mechanical Parts (1)



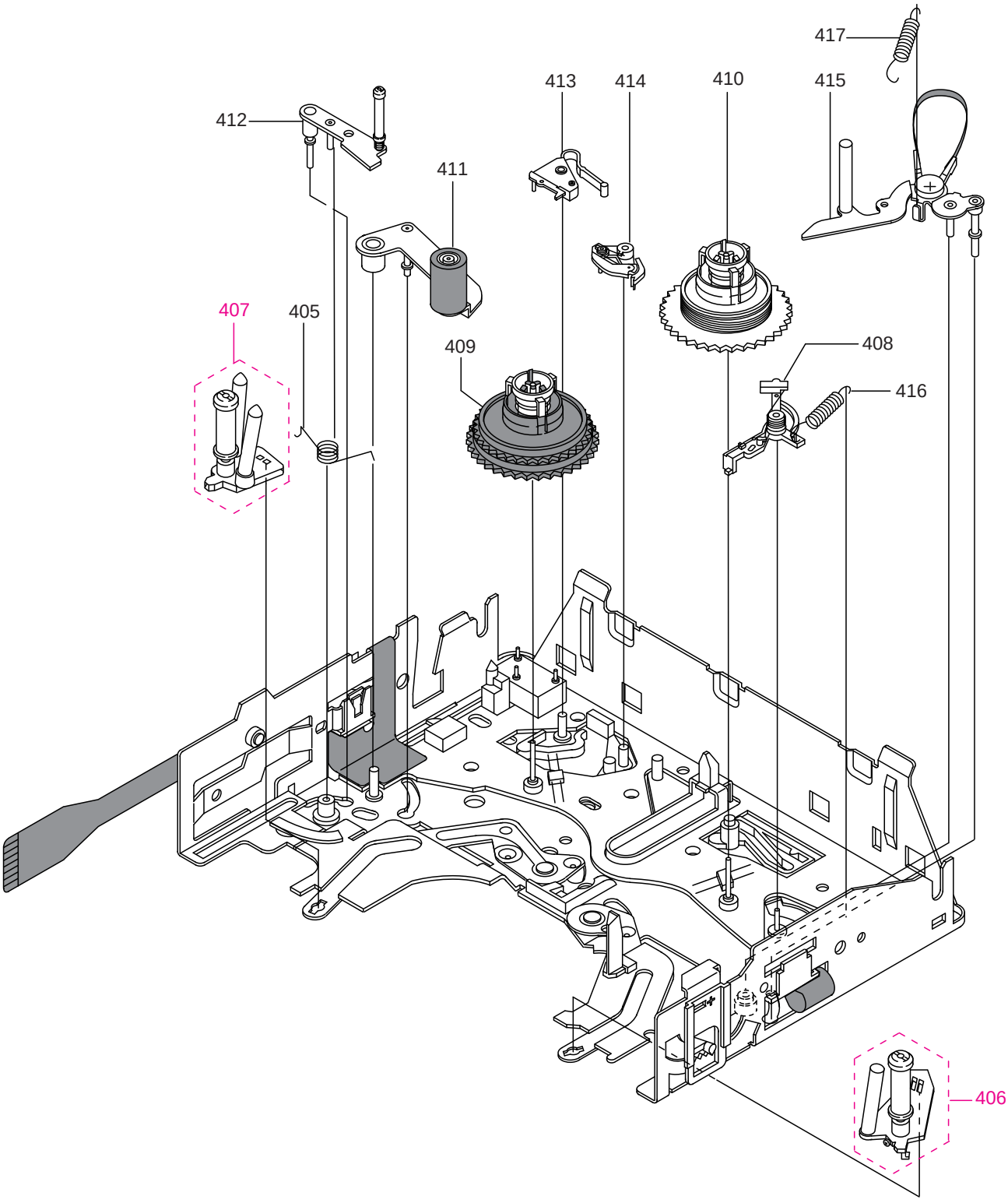
Loc. No	New Part No	Description and Specification	Remark
001	AC60-12083A	SCREW-MACHINE;B,BH,-,M1.7,L5,FE,WHT,-,-	
002	AD60-10500E	SCREW-MACHINE;-,BWSH,+,UP,M2,L5,ZPCNYLOK	
003	AD60-10500D	SCREW-MACHINE;-,BWSH,+,UP,M2,L7,ZPCNYLOK	
004	AC60-10017A	SCREW-MACHINE;BH,+,M1.7,X3.5,FEFZY,SWCH1	
005	AC60-12112A	SCREW-BH;-,BH,+,M1.4,L2,-	
021	AC60-30015A	WASHER-SLIT;ID 1.1,OD 2.6,T 0.4,POLYSLID	
301	AD96-10473P	ASSY-HOUSING;DE-6B,-	
302	AD96-10473S	ASSY-DRUM;DE-6B,PN-SS	
303	AD66-40153A	ROLLER-IMP ASS'Y;-,YF-10,OD7,-,DE-6	
304	AC61-72009A	CONTACT-EARTH BRUSH;SECC/PBSP/CR/C,-,-,-	
305	AC63-32091A	COVER-DRUM;DURACON(M90-44),-,-,-,-,-,DE-	
401	AC63-30009A	COVER-REEL ASSY;ABS 95,HB,-,-,-,-,DE-6,-	
402	AC66-12035A	IDLER-ASSY;-,-,DE-6	

6-5 Mechanical Parts (2)



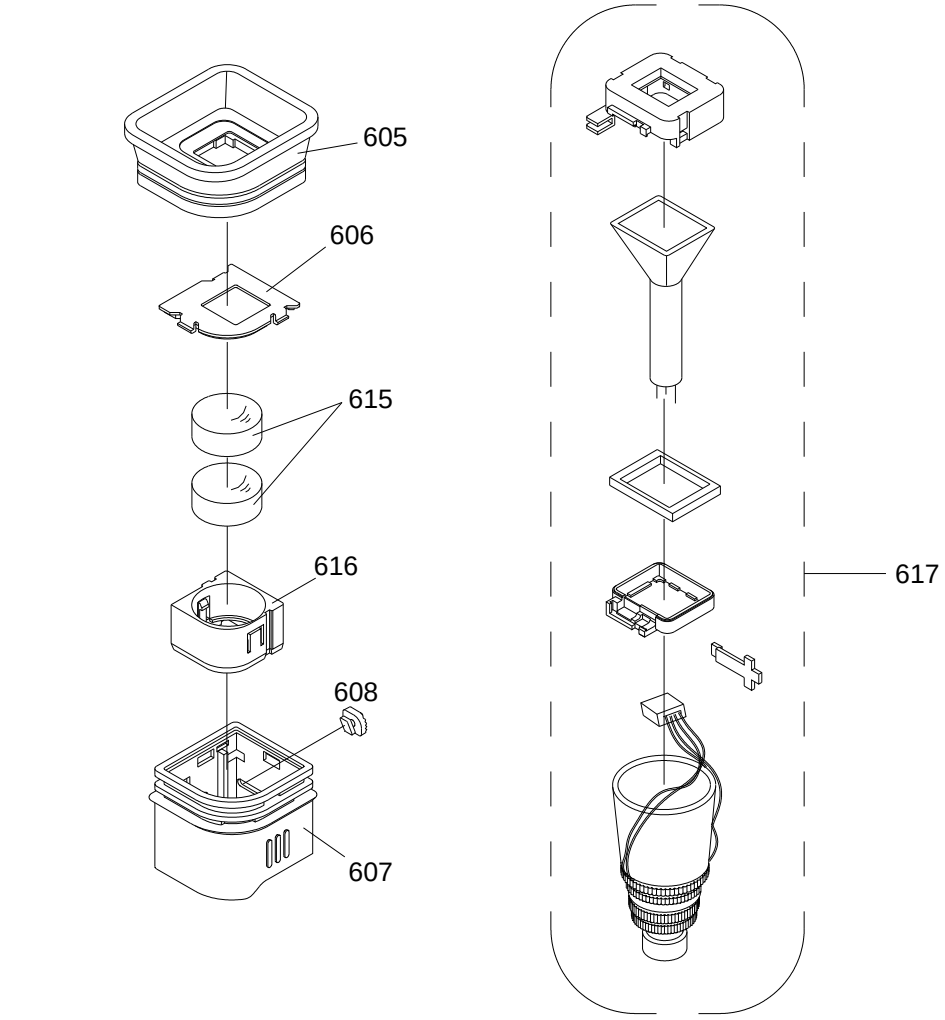
Loc. No	New Part No	Description and Specification	Reamrk
004	AC60-10017A	SCREW-MACHINE;BH,+,M1.7,X3.5,FEFZY,SWCH1	
005	AC60-12112A	SCREW-BH;-,BH,+,M1.4,L2,-	
020	AC60-30017A	WASHER-SLIT;ID 1,OD 2.6,T 0.4,POLYSLIDER	
501	AD31-12010A	MOTOR-CAPSTAN;DE-6B SHS,-,-	
502	AC66-22123A	GEAR-CAPSTAN(ASSY);-,-,-,-,-,DE-6	
503	AC66-22124A	GEAR-PULLEY(ASSY);-,-,-,-,-,DE-6	
504	AC66-62001A	BELT-TIMMING;POLYURETHAN,L137 T0.4,-,-,-	
505	AC66-32197A	LEVER-CAM;SUS430-CP,T0.6,-,-,DE-6,-	
506	AC66-42005A	ROLLER-CAM MAIN;SUS303,-,-,PI3.5X1.1	
507	AC66-22092A	GEAR-CAM MAIN;SUS304-CSP,M0.5,Z64,-,-,-	
508	AC66-82055A	SLIDER-MAIN(ASSY);-,-,-,-,DE-6	
509	AC66-32198A	LEVER-EJECT;DURANEX #3300,-,-,-,DE-6,-	
510	AC34-22001C	SWITCH-MODE ASSY;HMW0484-01WA,DE-6,-,-,-	
511	AC66-22126A	GEAR-LOADING;DURACON(99-44),M0.4,Z37 WO,	
512	AC31-12001P	MOTOR-LOADING ASSY;DE-6,-,-	

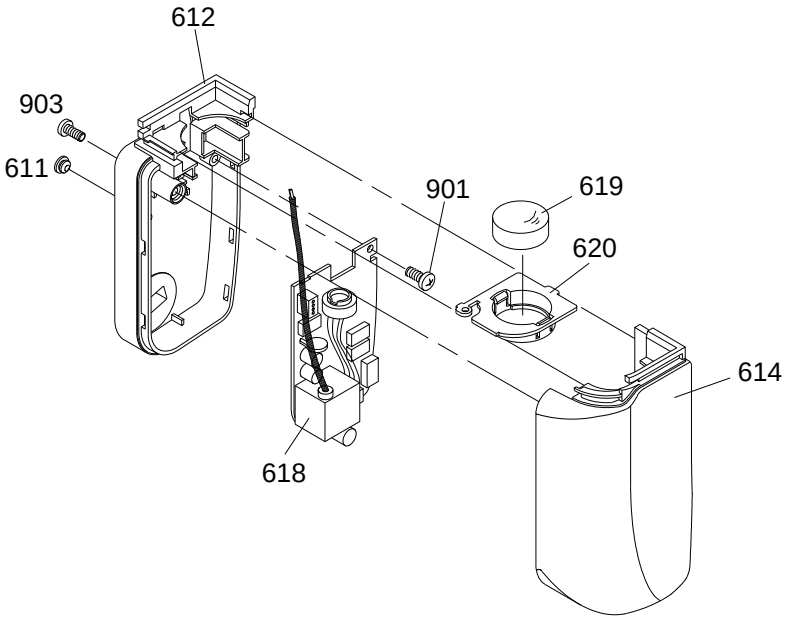
6-6 Mechanical Parts (3)



Loc. No	New Part No	Description and Specification	Remark
405	62724-0278-00	SPRING-REVIEW ARM;PS SUS304-WPB PI0.3	
406	AC61-52014A	POLE-BASE S(ASSY);ZDC2/SUS303,-,-,-,-,DE	
407	AC61-52015A	POLE-BASE T(ASSY);ZDC2/SUS303,-,-,-,-,DE	
408	AC66-32221A	BRAKE-SUB S(ASSY);-,-,-,-,DE-6,-	
409	AC66-12042A	REEL-T(ASSY);-,-,-,DE-6	
410	AC66-12041A	REEL-S(ASSY);-,-,-,DE-6	
411	AC66-32217A	ARM-PINCH ROLLER(ASS;-,-,-,-,DE-6	
412	AC66-32213A	ARM-REVIEW ASSY;-,-,-,-,DE-6	
413	AC66-32223A	BRAKE-MAIN(T);DURACON(M904-44),-,-,-,-,-	
414	AC66-30120A	BRAKE-SOFT T (ASSY);-,-,-,-,DE-6,-	
415	AC66-30093A	ARM-TENSION (ASSY);SUS304-CSP POM FELT,-	
416	AC61-62022A	SPRING-SOFT BRAKE(S);-,SUS304,-,-,-,-,-	
417	AC61-62023A	SPRING-TENSION;-,SUS304-WPB,-,-,-,-,-	

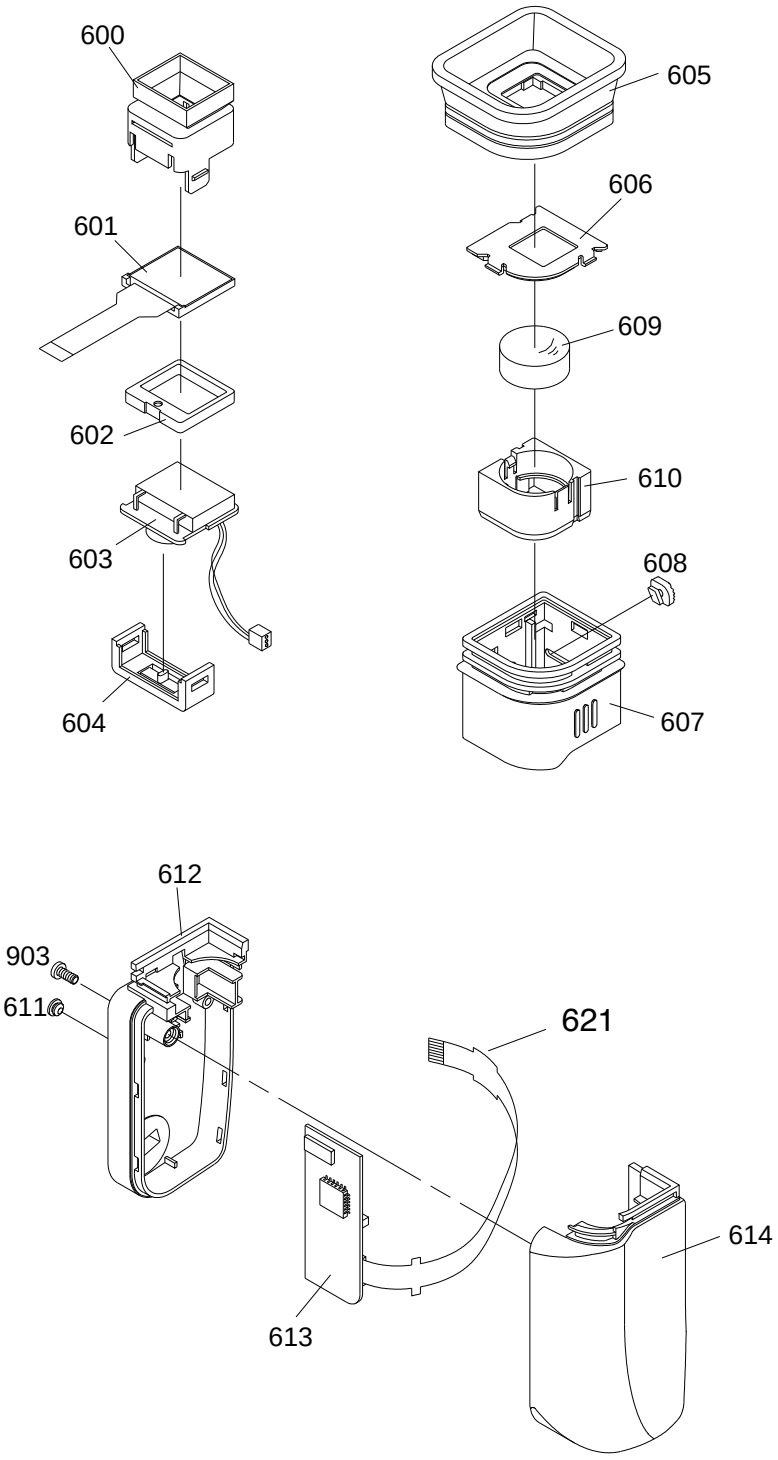
6-7 EVF (VP-A20/VP-A22)





Loc. No	New Part No	Description and Specification	Remark
605	AD73-10035A	RUBBER-EYE CUP;SILICON,-,VP-A20,-	
606	AD61-50724A	GUIDE-CAP;-,ABS94,HB,-,-,-,VP-A20	
607	AD61-50725A	GUIDE-EYE LENS;-,ABS94,HB,-,-,-,VP-A20	
608	AD64-10845A	KNOB-EVF;-,ABS94,HB,-,-,VP-A20	
611	AD61-20918A	CAP-FOCUS;-,MBR,-,BLK,-,VP-K70	
612	AD64-30934A	CASE-EVF R;-,ABS94,V0,-,-,-,-,VP-A20	
614	AD64-30933A	CASE-EVF L;-,ABS94,V0,-,-,-,-,VP-A20	VP-A20
614	AD64-30933C	CASE-EVF L;-,ABS94,V0,-,-,-,B/W,VP-A22	VP-A22
615	AC67-12070A	LENS-EVF(MD);PMMA D19.1 ASP,-,-,-,-,-	
616	AD61-22017A	HOLDER-EYE LENS A;-,ABS94,HB,-,-,VP-A20	
617	AC90-10012V	ASSY-CRT;CS96(SPORTS),-	
618	AD90-10822T	ASSY-EVF BOARD;A2-P/J,PAL	
619	AC67-10066A	LENS-EVF GJ;-,OPT,GRASS-F1,D11.5,-,CG819	
620	AD61-21083A	HOLDER-EYE LENS B;-,ABS94,HB,-,-,VP-A20	
901	AC60-10055A	SCREW-TAPPING;BH,+,-,M2,X4,FZB	
903	AC60-10054A	SCREW-TAPPING;BH,+,-,M2,X6,FZB	

6-8 CVF (VP-A21/A23)



Loc. No	New Part No	Description and Specification	Remark
600	AD61-21084A	HOLDER-LCD;-,PC/ABS,V0,-,-,VP-A20	
601	AC07-10001L	LCD DISPLAY;LCX005BKB,COLOR,537*222,0.5	
602	AD61-50708A	GUIDE-LIGHT;-,ABS94VO,-,T1.5,BLK,-,SV-S9	
603	AD90-10815L	ASSY-B/L BOARD;SV-S99,NTSC	
604	AD61-21045A	HOLDER-LIGHT;-,ABS94,HB,BLK,-,SV-S99	
605	AD73-10035A	RUBBER-EYE CUP;SILICON,-,VP-A20,-	
606	AD61-50724A	GUIDE-CAP;-,ABS94,HB,-,-,-,VP-A20	
607	AD61-50725A	GUIDE-EYE LENS;-,ABS94,HB,-,-,-,VP-A20	
608	AD64-10845A	KNOB-EVF;-,ABS94,HB,-,-,VP-A20	
609	66463-605-910	LENS EVF;PMMA CLR	
610	AD61-21082A	HOLDER-LENS;-,ABS94,HB,-,-,VP-A20/SEUK	
611	AD61-20918A	CAP-FOCUS;-,MBR,-,BLK,-,VP-K70	
612	AD64-30934A	CASE-EVF R;-,ABS94,V0,-,-,-,-,VP-A20	
613	AD90-10828V	ASSY-CVF BOARD;VP-A20,A2-CVF-PAL	
614	AD64-30933D	CASE-EVF L;-,ABS94,V0,-,-,-,COL,VP-A23	VP-A23
614	AD64-30933N	CASE-EVF L;VP-A21	VP-A21
621	AD41-20301B	FPC-CVF;POLYMIDE,T0.18,12P,VP-A57	
903	AC60-10054A	SCREW-TAPPING;BH,+,-,M2,X6,FZB	

MEMO

7. Electrical Parts List

Loc.No	Part No	Desc & Spec	Remark
140	**AD90-10823B**	**ASSY-MAIN BOARD;VP-A20,PAL**	**VP-A20**
140	**AD90-10833A**	**ASSY-MAIN BOARD;VP-A22,PAL**	**VP-A22**
140	**AD90-10832Z**	**ASSY-MAIN BOARD;VP-A23,PAL**	**VP-A23**
140	**AD90-10839U**	**ASSY-MAIN BOARD;VP-A21,PAL**	**VP-A21**
AUDIO BLOCK			
C701	2404-000250	C-TA,CHIP;470nF,20%,25V,-,TP,3216,-	
C702	2404-000250	C-TA,CHIP;470nF,20%,25V,-,TP,3216,-	
C703	2402-001013	C-AL,SMD;47uF,20%,6.3V,GP,5.3x1.5x5.4,1	
C704	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C705	2404-000367	C-TA,CHIP;4.7UF,20%,6.3V,-,TP,3216,-	
C706	2203-000919	C-CERAMIC,CHIP;470nF,+80-20%,16V,Y5V,TP,	
C707	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C708	2404-000367	C-TA,CHIP;4.7UF,20%,6.3V,-,TP,3216,-	
C709	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C710	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	
C711	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C712	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C713	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C714	2203-001607	C-CERAMIC,CHIP;220pF,5%,50V,CH,1608,1.6m	
C715	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C716	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C717	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
C718	2404-000367	C-TA,CHIP;4.7UF,20%,6.3V,-,TP,3216,-	
C719	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C720	2404-000175	C-TA,CHIP;2.2uF,20%,6.3V,WT,3216,1.1mm,T	
C721	2404-000259	C-TA,CHIP;47uF,20%,6.3V,-,TP,6032,-	
C722	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
C723	2404-000250	C-TA,CHIP;470nF,20%,25V,-,TP,3216,-	
C726	2404-000259	C-TA,CHIP;47uF,20%,6.3V,-,TP,6032,-	
C727	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C851	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C852	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
C853	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
C854	2404-000367	C-TA,CHIP;4.7UF,20%,6.3V,-,TP,3216,-	
C855	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
C856	2203-001662	C-CERAMIC,CHIP;5.6NF,10%,50V,CH,TP,1608,	
CN851	3711-002127	CONNECTOR-HEADER;BOX,8P,1R,1.25mm,SMD-A,	
IC701	1204-001307	IC-AUDIO PROCESSOR;LA7457W,QFP,64P,10MIL	
L701	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
Q701	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q702	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q703	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q851	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q852	0506-000150	TR-ARRAY;UMX2N,NPN,2,50V,40V,100MA,300M	
R701	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
R702	2007-000691	R-CHIP;3.3Mohm,5%,1/16W,DA,TP,1608	
R703	2007-000819	R-CHIP;390Kohm,5%,1/16W,DA,TP,1608	
R704	2007-000819	R-CHIP;390Kohm,5%,1/16W,DA,TP,1608	
R705	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R706	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R707	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R708	2007-000133	R-CHIP;330Kohm,5%,1/16W,DA,TP,1608	
R710	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R711	2007-000691	R-CHIP;3.3Mohm,5%,1/16W,DA,TP,1608	
R712	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R713	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R714	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R717	2007-000450	R-CHIP;180ohm,5%,1/16W,DA,TP,1608	
R720	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R721	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	
R722	2007-000462	R-CHIP;18ohm,5%,1/10W,DA,TP,2012	
R723	2007-000450	R-CHIP;180ohm,5%,1/16W,DA,TP,1608	
R725	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R726	2007-000091	R-CHIP;12Kohm,5%,1/16W,DA,TP,1608	
R728	2007-000103	R-CHIP;120Kohm,5%,1/16W,DA,TP,1608	
R801	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
R850	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R851	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R852	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
R853	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R854	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
R855	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
R856	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R857	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
R858	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R859	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
R860	2007-000655	R-CHIP;27Kohm,5%,1/16W,DA,TP 200	
R861	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R862	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R863	2007-000450	R-CHIP;180ohm,5%,1/16W,DA,TP,1608	
R864	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R865	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R866	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
CAMERA MAIN BLOCK			
CNP01	3710-001110	CONNECTOR-SOCKET;18P,2R,0.8MM,SMD-S,AU	
CNP02	3708-001262	CONNECTOR-FPC/FC/PIC;22P,0.5mm,SMD-A,SN	
CNP03	3711-002049	CONNECTOR-HEADER;BOX,6P,1R,1.25mm,SMD-A,	
CP01	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
CP02	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP05	2203-001573	C-CERAMIC,CHIP;12pF,5%,50V,CH,1608,1.6mm	
CP06	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP08	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP09	2203-001588	C-CERAMIC,CHIP;18pF,5%,50V,CH,1608,1.6mm	
CP10	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
CP11	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
CP12	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP13	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP14	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP18	2404-000159	C-TA,CHIP;1uF,20%,35V,-,TP,3528,-	
CP20	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CP21	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
CP22	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP23	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
CP24	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
CP25	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP26	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CP27	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CP28	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
CP29	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
CP30	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
CP31	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
CP34	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
CP35	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CP37	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
CP38	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP39	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP40	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP41	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP42	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CP47	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CP48	2203-000357	C-CERAMIC,CHIP;150pF,5%,50V,NPO,TP,1608,	
CP50	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
CP52	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP53	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CP54	2203-001634	C-CERAMIC,CHIP;33nF,10%,50V,X7R,TP,1608,	
CP55	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
CP56	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP57	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP58	2404-000190	C-TA,CHIP;22uF,20%,16V,-,5832,-,TP	
CP60	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CP61	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP62	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP63	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP64	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	

Loc.No	Part No	Desc & Spec	Remark
CP65	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
CP66	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
CP67	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP68	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CP69	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP70	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP71	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CP72	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
CP73	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
CP74	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
CP75	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CP78	2404-000212	C-TA,CHIP;3.3uF,20%,25V,-,3528,-,TP	
CP80	2404-000212	C-TA,CHIP;3.3uF,20%,25V,-,3528,-,TP	
CP81	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CP82	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CP85	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP86	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP87	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
CP88	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	
CP89	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP90	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP91	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CP92	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS01	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CS02	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS03	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS04	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CS05	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS06	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS07	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
CS08	2203-000054	C-CERAMIC,CHIP;15nF,0.1,50V,X7R,TP,1608,	
CS09	2404-001039	C-TA,CHIP;47uF,20%,6.3V,GP,TP,3528,-	
CS10	2404-001039	C-TA,CHIP;47uF,20%,6.3V,GP,TP,3528,-	
CS11	2203-001630	C-CERAMIC,CHIP;330nF,+80-20%,16V	
CS12	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
CS13	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
CS14	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS15	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS16	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CS17	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS18	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS19	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
CS20	2404-001039	C-TA,CHIP;47uF,20%,6.3V,GP,TP,3528,-	
CS21	2404-001039	C-TA,CHIP;47uF,20%,6.3V,GP,TP,3528,-	
CS22	2203-001630	C-CERAMIC,CHIP;330nF,+80-20%,16V	
CS23	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
CS24	2203-000054	C-CERAMIC,CHIP;15nF,0.1,50V,X7R,TP,1608,	
CS25	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CS26	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
CTP501	3710-000413	CONNECTOR-SOCKET;14P,2R,0.8mm,STRAIGHT,S	
CZ01	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CZ03	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
CZ04	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
DP02	0405-000151	DIODE-VARACTOR;1T379,30V,10nA,USMD,TP	
DP03	0405-000143	DIODE-VARACTOR;MA341,30V,10nA,MINI-2,TP	
DP05	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
DP10	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
DP11	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
ICP01	AD14-10001L	IC-LOGIC;KS7213,QFP,80P	
ICP02	1003-001065	IC-CLOCK DRIVER;KS7221D,SOP,20P,225MIL,Q	
ICP03	1002-001060	IC-A/D CONVERTER;TDA8786A,10BIT,QFP,48P,	
ICP04	AD14-10001V	IC-LOGIC;KS7306B,QFP,100P,REV	
ICP05	AD09-12002E	IC-MICOM;uPD784035GC-818-8BIT,QFP,2ND	
ICP06	1201-000246	IC-OP AMP;3403,SOP,14P,173MIL,QUAD,20V/m	
ICP07	1201-000246	IC-OP AMP;3403,SOP,14P,173MIL,QUAD,20V/m	
ICP08	AC14-12008D	IC-LOGIC;MPC17A85ZVM/SC111315,SOP,TAPE	
ICP09	AC14-12008D	IC-LOGIC;MPC17A85ZVM/SC111315,SOP,TAPE	
ICP10	AC11-12001G	IC-EEPROM;AT24C02N-10SC,QFP,-	
ICP11	AD14-10001H	IC-REGULATORS;TPS7233Q-PWLE,SSOP,8P	
ICP12	0801-000301	IC-CMOS LOGIC;7W04,INVERTER,SOP,8P,150MI	
ICS01	AC14-12007X	IC-LOGIC;TC4S66F,SSOP-5,5P	
ICS02	1201-000200	IC-OP AMP;3414,SOP,8P,173MIL,DUAL,-,PLAS	
ICS03	AC14-12007X	IC-LOGIC;TC4S66F,SSOP-5,5P	

Loc.No	Part No	Desc & Spec	Remark
ICS04	1201-000246	IC-OP AMP;3403,SOP,14P,173MIL,QUAD,20V/m	
ICZ01	AD14-10001N	IC-LOGIC;KS7314X,QFP,80P	
LP01	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
LP03	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LP04	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
LP05	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
LP06	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LP07	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LP08	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LP09	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
LP10	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LP12	2703-001494	INDUCTOR-SMD;100UH,5%,2.5X2.0X1.8	
LP13	2703-001494	INDUCTOR-SMD;100UH,5%,2.5X2.0X1.8	
LP15	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LP16	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LZ01	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
LZ02	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
QP01	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
QP02	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
QP06	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
QP07	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
QP08	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
RP01	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RP02	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RP03	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
RP05	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RP06	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RP08	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
RP10	2007-000098	R-CHIP;56Kohm,5%,1/16W,DA,TP,1608	
RP100	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RP101	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP11	2007-000250	R-CHIP;1.5Mohm,5%,1/16W,DA,TP,1608	
RP12	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
RP13	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
RP14	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
RP15	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
RP16	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
RP17	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
RP18	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
RP19	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
RP20	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
RP21	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP27	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP28	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP29	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP30	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP31	2007-000402	R-CHIP;150ohm,5%,1/16W,DA,TP,1608	
RP32	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
RP33	2007-000450	R-CHIP;180ohm,5%,1/16W,DA,TP,1608	
RP34	2007-000402	R-CHIP;150ohm,5%,1/16W,DA,TP,1608	
RP35	2007-001694	R-CHIP;12Kohm,0.5%,1/16W,DA,TP,1608	
RP36	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
RP37	2007-000828	R-CHIP;39Kohm,1%,1/16W,DA,TP,1608	
RP38	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP40	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP41	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP42	2007-000512	R-CHIP;2.4Kohm,5%,1/16W,DA,TP,1608	
RP43	2007-000104	R-CHIP;150Kohm,5%,1/16W,DA,TP,1608	
RP44	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RP45	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
RP46	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
RP47	2007-000104	R-CHIP;150Kohm,5%,1/16W,DA,TP,1608	
RP48	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
RP49	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP50	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
RP51	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RP53	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
RP54	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RP55	2007-000637	R-CHIP;270Kohm,5%,1/16W,DA,TP,1608	
RP56	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RP57	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RP58	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
RP59	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	

Loc.No	Part No	Desc & Spec	Remark
RP63	2007-000096	R-CHIP;30Kohm,5%,1/16W,DA,TP,1608	
RP65	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RP66	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
RP67	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP68	2007-000863	R-CHIP:4.3ohm,5%,1/10W,DA,TP,2012	
RP69	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
RP70	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
RP71	2007-000863	R-CHIP:4.3ohm,5%,1/10W,DA,TP,2012	
RP72	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP73	2007-000863	R-CHIP:4.3ohm,5%,1/10W,DA,TP,2012	
RP74	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
RP75	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
RP76	2007-000863	R-CHIP:4.3ohm,5%,1/10W,DA,TP,2012	
RP77	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RP78	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
RP79	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
RP80	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
RP81	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP85	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP86	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP89	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP90	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
RP91	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP93	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RP95	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RP96	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RS01	2007-000781	R-CHIP;33ohm,5%,1/10W,DA,TP,2012	
RS02	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RS03	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RS04	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RS05	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
RS06	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
RS07	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RS08	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
RS09	2007-001026	R-CHIP;560Kohm,5%,1/16W,DA,TP,1608	
RS10	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RS11	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
RS13	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RS14	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RS15	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RS16	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
RS17	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
RS18	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
RS19	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RS20	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
RS21	2007-001026	R-CHIP;560Kohm,5%,1/16W,DA,TP,1608	
RS22	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RZ01	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
XP01	2801-001428	CRYSTAL-SMD;28.375MHz,30ppm,28-ABL,7pF,6	
XP02	2801-003347	CRYSTAL-UNIT;17.734475MHz,20ppm,28-ABN,8	
XP03	2801-003491	CRYSTAL-UNIT;32MHz,50ppm,28-ABL,9.2pF,60	
DC/DC CONVERTER BLOCK			
C901	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C902	2203-000512	C-CERAMIC,CHIP;2.2uF,+80-20%,16V,Y5V,321	
C903	2404-000128	C-TA,CHIP;10uF,20%,16V,-,TP,6032,-	
C904	2203-001724	C-CERAMIC,CHIP;4.7UF,+80-20%,16V,Y5V,321	
C905	2404-000120	C-TA,CHIP;10uF,20%,10V,-,TP,3528,-	
C907	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C908	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C909	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C910	2404-000120	C-TA,CHIP;10uF,20%,10V,-,TP,3528,-	
C912	2404-000120	C-TA,CHIP;10uF,20%,10V,-,TP,3528,-	
C915	2404-000120	C-TA,CHIP;10uF,20%,10V,-,TP,3528,-	
C916	2203-000512	C-CERAMIC,CHIP;2.2uF,+80-20%,16V,Y5V,321	
C917	2404-000120	C-TA,CHIP;10uF,20%,10V,-,TP,3528,-	
C920	2203-000481	C-CERAMIC,CHIP;1uF,+80-20%,25V,Y5V,TP,32	
C921	2203-000481	C-CERAMIC,CHIP;1uF,+80-20%,25V,Y5V,TP,32	
C922	2203-000512	C-CERAMIC,CHIP;2.2uF,+80-20%,16V,Y5V,321	
C923	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C924	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C925	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C926	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	

Loc.No	Part No	Desc & Spec	Remark
C927	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C928	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C929	2203-001636	C-CERAMIC,CHIP;33pF,5%,50V,NPO,TP,1608,1	
C930	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	
C931	2203-001636	C-CERAMIC,CHIP;33pF,5%,50V,NPO,TP,1608,1	
C932	2203-001632	C-CERAMIC,CHIP;330pF,5%,50V,CH,1608,1.6m	
C933	2203-001640	C-CERAMIC,CHIP;390PF,10%,50V,X7R,TP,1608	
C934	2203-002220	C-CERAMIC,CHIP;56PF,5%,50V,CH,TP,1608,-	
C935	2203-001632	C-CERAMIC,CHIP;330pF,5%,50V,CH,1608,1.6m	
C936	2203-001640	C-CERAMIC,CHIP;390PF,10%,50V,X7R,TP,1608	
C937	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C938	2203-001636	C-CERAMIC,CHIP;33pF,5%,50V,NPO,TP,1608,1	
C940	2203-000512	C-CERAMIC,CHIP;2.2uF,+80-20%,16V,Y5V,321	
C941	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	
C942	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	
C943	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C944	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C945	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C946	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C949	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C950	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CN901	3711-002163	CONNECTOR-HEADER;3WALL,7P,1R,1.25mm,SMD-	
D901	0404-000150	DIODE-SCHOTTKY;EC10QS04,40V,1A,SMD,TP	
D902	0407-001013	DIODE-ARRAY;MA160A,80V,100mA,CX2,SOT-143	
IC901	1203-000445	IC-POSI.FIXED REG.;14641,TO-220,3P;-,PLA	
L901	2703-000402	INDUCTOR-SMD;1uH,20%,3.2x2.5x2.2mm	
L902	2703-000408	INDUCTOR-SMD;3.3uH,20%,3.2x2.5x2.2mm	
L903	2703-000408	INDUCTOR-SMD;3.3uH,20%,3.2x2.5x2.2mm	
L904	2703-000414	INDUCTOR-SMD;22uH,20%,7x7x3.2mm	
L905	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L906	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L907	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L908	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L909	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L910	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L911	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L912	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L913	2703-001194	INDUCTOR-SMD;100uH,20%,7x7x3.2mm	
L914	2703-001194	INDUCTOR-SMD;100uH,20%,7x7x3.2mm	
L915	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L917	2703-000399	INDUCTOR-SMD;100uH,10%,3.2x2.5x2.2mm	
L918	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
L919	2703-000399	INDUCTOR-SMD;100uH,10%,3.2x2.5x2.2mm	
Q901	0502-000432	TR-POWER;2SB1302-S,PNP,1.3W,SC-62,TP,14	
Q902	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
Q903	0501-000172	TR-SMALL SIGNAL;2SB1121,PNP,500MW,PCP,TP	
Q904	0501-000681	TR-SMALL SIGNAL;FP101,PNP,1.3W,PCP4,TP,1	
Q905	0501-000681	TR-SMALL SIGNAL;FP101,PNP,1.3W,PCP4,TP,1	
Q906	0501-000172	TR-SMALL SIGNAL;2SB1121,PNP,500MW,PCP,TP	
Q907	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
Q908	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q909	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q910	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
R901	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R902	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R903	2007-001699	R-CHIP;120Kohm,0.5%,1/16W,DA,TP,1608	
R904	2007-001694	R-CHIP;12Kohm,0.5%,1/16W,DA,TP,1608	
R905	2007-007202	R-CHIP;51Kohm,0.5%,1/16W,DA,TP,1608	
R906	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R907	2007-007204	R-CHIP;5.1Kohm,0.5%,1/16W,DA,TP,1608	
R908	2007-000766	R-CHIP;330ohm,5%,1/10W,DA,TP,2012	
R910	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
R911	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R912	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
R914	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R915	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	
R916	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
R917	2007-001643	R-CHIP;100Kohm,0.5%,1/16W,DA,TP,1608	
R918	2007-001643	R-CHIP;100Kohm,0.5%,1/16W,DA,TP,1608	
R919	2007-007203	R-CHIP;5.6Kohm,0.5%,1/16W,DA,TP,1608	
R920	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R922	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
R923	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	

Loc.No	Part No	Desc & Spec	Remark
R924	2007-001695	R-CHIP;22Kohm,0.5%,1/16W,DA,TP,1608	
R925	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R926	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R927	2007-001114	R-CHIP;680Kohm,5%,1/16W,DA,TP,1608	
R929	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
R930	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
R931	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R932	2007-000081	R-CHIP;2.7Kohm,5%,1/16W,DA,TP,1608	
R933	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R934	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R935	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R936	2007-000655	R-CHIP;27Kohm,5%,1/16W,DA,TP 200	
R937	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	
R940	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R941	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R942	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R943	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
R944	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R945	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R946	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R947	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
T901	AC26-22002C	TRANS-SWITCHING;CMS64,-,-,T,-,-,-	
SYSCON/SERVO BLOCK			
B601	AC29-32001B	FILTER-EMI BEAD:CB321611-TA SB 0.2OH,-,-	
C401	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
C402	2203-001573	C-CERAMIC,CHIP;12pF,5%,50V,CH,1608,1.6mm	
C403	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C404	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C421	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C501	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C502	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C503	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C504	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	
C505	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C506	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C507	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C508	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C509	2203-000062	C-CERAMIC,CHIP;47NF,+80-20%,50V,Y5V,1608	
C510	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C511	2203-000062	C-CERAMIC,CHIP;47NF,+80-20%,50V,Y5V,1608	
C512	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C515	2203-001640	C-CERAMIC,CHIP;390PF,10%,50V,X7R,TP,1608	
C516	2203-000929	C-CERAMIC,CHIP;470PF,10%,50V,X7R,1608,-,	
C517	2203-000062	C-CERAMIC,CHIP;47NF,+80-20%,50V,Y5V,1608	
C524	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C525	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C526	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C527	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C528	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C529	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C530	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C531	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
C532	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C533	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C534	2203-000062	C-CERAMIC,CHIP;47NF,+80-20%,50V,Y5V,1608	
C535	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	
C536	2203-001630	C-CERAMIC,CHIP;330nF,+80-20%,16V	
C537	2203-002218	C-CERAMIC,CHIP;47NF,10%,16V,X7R,TP,1608,	
C538	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
C539	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
C540	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
C541	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C542	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C543	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C544	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C545	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C546	2203-000199	C-CERAMIC,CHIP;100nF,+80-20%,50V,Z5U,TP,	
C547	2402-000198	C-AL,SMD;47uF,20%,16V,GP,TP,6.3x5.4,-	
C548	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C549	2404-000120	C-TA,CHIP;10uF,20%,10V,-,TP,3528,-	
C550	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C552	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C553	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C554	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C555	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C601	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C602	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C603	2402-001009	C-AL,SMD;100UF,20%,6.3V,GP,TP,5.3X5.3X5	
C604	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C605	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C606	2404-000232	C-TA,CHIP;4.7uF,20%,10V,WT,3216,-,TP	
C608	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C609	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	
C610	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	
C611	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	
C612	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	
C613	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C614	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C615	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C616	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C617	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C618	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C625	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C626	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C628	2404-001039	C-TA,CHIP;47uF,20%,6.3V,GP,TP,3528,-	
CN501	3710-001301	CONNECTOR-SOCKET;48P,2R,0.8mm,SMD-S,SN	
CN601	3710-001110	CONNECTOR-SOCKET;18P,2R,0.8MM,SMD-S,AU	
CN603	3711-000456	CONNECTOR-HEADER;3WALL,4P,1R,1.25mm,SMD-	
D402	0407-000115	DIODE-ARRAY;DAN202U,80V,100mA,CA	
IC401	1204-001146	IC-OSD PROCESSOR;BU6251FV,SOP,20P,240MIL	
IC421	1002-001070	IC-D/A CONVERTER;M62353GP,8BIT,SOP,16P,-	
IC501	AC14-12005J	IC-LOGIC;KA8322,QFP,-	
IC502	1003-001012	IC-MOTOR DRIVER;LB1950,SOP,30P,300MIL,SI	
IC503	1003-001020	IC-MOTOR DRIVER;LB1951,SOP,24P,-,SINGLE,	
IC504	1003-001146	IC-MOTOR DRIVER;LB1843VL,SOP,20P,-,-,800	
IC601	AD09-10452B	IC-MCU;CXP87240A-142Q,100P,QFP,VP-A20	
IC602	1203-001123	IC-VOLTAGE REGULATOR;8420,SOP,8P,216MIL,	
L401	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L402	2703-000372	INDUCTOR-SMD;56uH,5%,2.5x2x1.8mm	
L421	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L601	2703-000399	INDUCTOR-SMD;100uH,10%,3.2x2.5x2.2mm	
Q501	0501-000172	TR-SMALL SIGNAL;2SB1121,PNP,500MW,PCP,TP	
Q502	0504-000110	TR-DIGITAL;DTC114EU,NPN,200mW,10K-10Kohm	
Q602	0504-000194	TR-DIGITAL;DTC124EU,NPN,200MW,22K-22K,SC	
Q604	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q605	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
R401	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R402	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R403	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R404	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R405	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R406	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
R407	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R408	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R409	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R410	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R412	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R413	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R417	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R501	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R502	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R503	2007-000065	R-CHIP;2.2Mohm,5%,1/16W,DA,TP,1608	
R504	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R505	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R506	2007-000098	R-CHIP;56Kohm,5%,1/16W,DA,TP,1608	
R507	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R508	2007-001114	R-CHIP;680Kohm,5%,1/16W,DA,TP,1608	
R509	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R510	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R511	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
R512	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	
R513	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
R514	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R515	2007-000093	R-CHIP;20Kohm,5%,1/16W,DA,TP,1608	
R516	2007-000093	R-CHIP;20Kohm,5%,1/16W,DA,TP,1608	

Loc.No	Part No	Desc & Spec	Remark
R517	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R518	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R519	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
R523	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R524	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R525	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
R526	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R530	2007-000483	R-CHIP;1ohm,5%,1/10W,DA,TP,2012	
R531	2007-000483	R-CHIP;1ohm,5%,1/10W,DA,TP,2012	
R532	2007-000483	R-CHIP;1ohm,5%,1/10W,DA,TP,2012	
R533	2007-000483	R-CHIP;1ohm,5%,1/10W,DA,TP,2012	
R536	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R537	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R538	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R540	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R541	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R542	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R543	2007-000091	R-CHIP;12Kohm,5%,1/16W,DA,TP,1608	
R544	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R545	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R550	2007-000503	R-CHIP;2.2OHM,5%,1/16W,DA,TP,1608	
R551	2007-000503	R-CHIP;2.2OHM,5%,1/16W,DA,TP,1608	
R552	2007-000503	R-CHIP;2.2OHM,5%,1/16W,DA,TP,1608	
R559	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	
R569	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
R570	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R601	2007-001700	R-CHIP;330Kohm,0.5%,1/16W,DA,TP,1608	
R602	2007-001693	R-CHIP;15Kohm,0.5%,1/16W,DA,TP,1608	
R603	2007-001700	R-CHIP;330Kohm,0.5%,1/16W,DA,TP,1608	
R604	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R605	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
R606	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R607	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R608	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R609	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R611	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R612	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R613	2007-000065	R-CHIP;2.2Mohm,5%,1/16W,DA,TP,1608	
R614	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R615	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R616	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R617	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R618	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R619	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R620	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R621	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R623	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R624	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R625	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
R626	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R627	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R628	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R629	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R630	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R631	2007-000290	R-CHIP;100ohm,5%,1/10W,DA,TP,2012	
R632	2007-001644	R-CHIP;10Kohm,0.5%,1/16W,DA,TP,1608	
R633	2007-001643	R-CHIP;100Kohm,0.5%,1/16W,DA,TP,1608	
R634	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R635	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R636	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R637	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R638	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R639	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R640	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R641	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R644	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R646	2007-001643	R-CHIP;100Kohm,0.5%,1/16W,DA,TP,1608	
R648	2007-001643	R-CHIP;100Kohm,0.5%,1/16W,DA,TP,1608	
R655	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R656	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R657	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R658	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R659	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R660	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R661	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R662	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R663	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R664	2007-001643	R-CHIP;100Kohm,0.5%,1/16W,DA,TP,1608	
R665	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R667	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R668	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R669	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R670	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R671	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R672	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R673	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R674	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R675	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R676	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R677	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R678	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R679	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R680	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R683	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R684	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R685	2007-000033	R-CHIP;0ohm,5%,1/8W,DA,TP,3216	
R686	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
XT601	2801-001449	CRYSTAL-SMD;32.768KHZ,20PPM,28-AAW,12.5P	
XT602	2801-003239	CRYSTAL-SMD;11.71875MHz,50ppm,28-ABL,13p	
VIDEO BLOCK			
C101	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C102	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C103	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C104	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C105	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C106	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C107	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C108	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C109	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C110	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C111	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C112	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C113	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C114	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C115	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C116	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C117	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
C118	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C120	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C121	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C122	2203-000357	C-CERAMIC,CHIP;150pF,5%,50V,NPO,TP,1608,	
C123	2203-001686	C-CERAMIC,CHIP;75PF,5%,50V,CH,TP,1608,1.	
C124	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
C125	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C126	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C151	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C152	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C153	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C154	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C155	2203-001636	C-CERAMIC,CHIP;33pF,5%,50V,NPO,TP,1608,1	
C156	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C158	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
C159	2203-001616	C-CERAMIC,CHIP;270pF,5%,50V,CH,1608,1.6m	
C162	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	
C163	2203-001588	C-CERAMIC,CHIP;18pF,5%,50V,CH,1608,1.6mm	
C164	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C165	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C166	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C167	2203-001568	C-CERAMIC,CHIP;110PF,5%,50V,CH,TP,1608,1	
C168	2203-000851	C-CERAMIC,CHIP;39PF,5%,50V,NPO,TP,1608,-	
C201	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C202	2203-001640	C-CERAMIC,CHIP;390PF,10%,50V,X7R,TP,1608	
C203	2203-001632	C-CERAMIC,CHIP;330pF,5%,50V,CH,1608,1.6m	
C204	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C205	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	

Loc.No	Part No	Desc & Spec	Remark
C206	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C207	2203-000357	C-CERAMIC,CHIP;150pF,5%,50V,NPO,TP,1608,	
C208	2203-001607	C-CERAMIC,CHIP;220pF,5%,50V,CH,1608,1.6m	
C209	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
C211	2203-001656	C-CERAMIC,CHIP;470pF,5%,50V,CH,1608,1.6m	
C212	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C214	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C215	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C216	2404-000166	C-TA,CHIP;2.2uF,20%,10V,-,TP,3216,-	
C217	2404-000166	C-TA,CHIP;2.2uF,20%,10V,-,TP,3216,-	
C218	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C219	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C220	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C221	2203-000357	C-CERAMIC,CHIP;150pF,5%,50V,NPO,TP,1608,	
C222	2203-001588	C-CERAMIC,CHIP;18pF,5%,50V,CH,1608,1.6mm	
C223	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C224	2203-000919	C-CERAMIC,CHIP;470nF,+80-20%,16V,Y5V,TP,	
C225	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C226	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C227	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C228	2203-001402	C-CERAMIC,CHIP;220nF,+80-20%,16V	
C229	2404-000232	C-TA,CHIP;4.7uF,20%,10V,WT,3216,-,TP	
C230	2402-001008	C-AL,SMD;220uF,20%,4V,-,6.6x6.6x5.4mm,2	
C231	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C232	2404-001039	C-TA,CHIP;47uF,20%,6.3V,GP,TP,3528,-	
C233	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C234	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C236	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C237	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C238	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C239	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C241	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C242	2203-001568	C-CERAMIC,CHIP;110PF,5%,50V,CH,TP,1608,1	
C243	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	
C244	2203-000851	C-CERAMIC,CHIP;39PF,5%,50V,NPO,TP,1608,-	
C245	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C246	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
C247	2203-001103	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,1608	
C248	2203-001609	C-CERAMIC,CHIP;22NF,10%,16V,X7R,TP,1608,	
C249	2404-000261	C-TA,CHIP;680nF,20%,20V,-,TP,3216,-	
C250	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C251	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C254	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C255	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C256	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C257	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C258	2404-000232	C-TA,CHIP;4.7uF,20%,10V,WT,3216,-,TP	
C259	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C260	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C261	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C262	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C263	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C264	2404-000198	C-TA,CHIP;22uF,20%,6.3V,-,TP,3528,-	
C265	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C266	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C267	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C268	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C269	2203-000062	C-CERAMIC,CHIP;47NF,+80-20%,50V,Y5V,1608	
C270	2203-001636	C-CERAMIC,CHIP;33pF,5%,50V,NPO,TP,1608,1	
C291	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C301	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C302	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C303	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C304	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C306	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C307	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C308	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
C309	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C310	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C311	2203-001588	C-CERAMIC,CHIP;18pF,5%,50V,CH,1608,1.6mm	
C312	2203-001618	C-CERAMIC,CHIP;27pF,5%,50V,CH,1608,1.6mm	
C313	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C314	2203-001618	C-CERAMIC,CHIP;27pF,5%,50V,CH,1608,1.6mm	
C315	2203-001618	C-CERAMIC,CHIP;27pF,5%,50V,CH,1608,1.6mm	
C316	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	
C317	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C318	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-	
C319	2203-001559	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	
C320	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C321	2203-001658	C-CERAMIC,CHIP;47pF,5%,50V,CH,1608,1.6mm	
C322	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
C323	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
C324	2203-001683	C-CERAMIC,CHIP;68PF,5%,50V,CH,TP,1608,1.	
C325	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C326	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C331	2203-001588	C-CERAMIC,CHIP;18pF,5%,50V,CH,1608,1.6mm	
C351	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C352	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
C353	2203-001568	C-CERAMIC,CHIP;110PF,5%,50V,CH,TP,1608,1	
C354	2404-000232	C-TA,CHIP;4.7uF,20%,10V,WT,3216,-,TP	
C355	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C356	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C357	2203-001640	C-CERAMIC,CHIP;390PF,10%,50V,X7R,TP,1608	
C358	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C359	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,1608,-,TP	
C360	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
C361	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C362	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
C363	2203-001567	C-CERAMIC,CHIP;10pF,0.5pF,50V,CH,1608,1.	
CN101	3708-001243	CONNECTOR-FPC/FC/PIC;11P,1MM,SMD-A,SN	
D151	0407-000145	DIODE-ARRAY;DCC010,-80V,100mA,C2-3,SOT-2	
D201	0407-000115	DIODE-ARRAY;DAN202U,80V,100mA,CA	
D202	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
D203	0407-000102	DIODE-ARRAY;DA204U,20V,100MA,C2-3,SC-70,	
D351	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
IC101	1201-001087	IC-PREAMP;52369,QFP,48P,-,SINGLE,-,PLAST	
IC201	AC14-12012G	IC;CXA1700R,QFP,-	
IC202	1201-001083	IC-AGC AMP;1211,SOP,8P,225MIL,DUAL,5dB,P	
IC203	AC14-12015G	IC-LINEAR;NJM2249V,SSOP,TAPE	
IC302	1209-001044	IC-DELAY LINE;CXL5517N,SOP,20P,173MIL,PL	
IC351	AC14-12012S	IC;M52358VP,SOP,-	
L101	2703-000399	INDUCTOR-SMD;100uH,10%,3.2x2.5x2.2mm	
L102	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L103	2703-001493	INDUCTOR-SMD;10uH,5%,2.5x2.0x1.8	
L151	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L152	2703-000385	INDUCTOR-SMD;330uH,5%,3.2x2.5x2.2mm	
L153	2703-000416	INDUCTOR-SMD;100uH,5%,2.5x3.2x2.2mm	
L154	2703-000388	INDUCTOR-SMD;470uH,5%,3.2x2.5x2.2mm	
L155	2703-000381	INDUCTOR-SMD;180uH,5%,3.2x2.5x2.2mm	
L157	2703-000372	INDUCTOR-SMD;56uH,5%,2.5x2x1.8mm	
L158	2703-001493	INDUCTOR-SMD;10uH,5%,2.5x2.0x1.8	
L202	2703-000409	INDUCTOR-SMD;47uH,10%,3.2x2.5x2.2mm	
L203	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
L205	2703-001494	INDUCTOR-SMD;100UH,5%,2.5X2.0X1.8	
L206	2703-000385	INDUCTOR-SMD;330uH,5%,3.2x2.5x2.2mm	
L208	2703-000366	INDUCTOR-SMD;22uH,5%,2.5x2x1.8mm	
L209	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L210	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L211	2703-000366	INDUCTOR-SMD;22uH,5%,2.5x2x1.8mm	
L212	2703-000376	INDUCTOR-SMD;8.2uH,5%,2.5x2x1.8mm	
L301	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L302	2703-000397	INDUCTOR-SMD;33uH,10%,2.5x2x1.8mm	
L303	2703-000367	INDUCTOR-SMD;33uH,5%,2.5x2x1.8mm	
L304	2703-001493	INDUCTOR-SMD;10uH,5%,2.5x2.0x1.8	
L305	2703-001498	INDUCTOR-SMD;4.7UH,5%,2.5X2.0X1.8	
L306	2703-000367	INDUCTOR-SMD;33uH,5%,2.5x2x1.8mm	
L307	2703-001498	INDUCTOR-SMD;4.7UH,5%,2.5X2.0X1.8	
L351	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
Q102	0506-000148	TR-ARRAY;UMT2N,PNP,2,-50V,-40V,-100MA,3	
Q151	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q152	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q154	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q156	0501-000207	TR-SMALL SIGNAL;2SC3142,NPN,150MW,SOT-23	
Q157	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q201	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q206	0506-000150	TR-ARRAY;UMX2N,NPN,2,50V,40V,100MA,300M	

Loc.No	Part No	Desc & Spec	Remark
Q207	0506-000151	TR-ARRAY;UMZ1N,NPN/PNP,1,50V,40V,100MA,	
Q208	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q209	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q210	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q211	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q212	0506-000151	TR-ARRAY;UMZ1N,NPN/PNP,1,50V,40V,100MA,	
Q213	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
Q214	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q215	0506-000150	TR-ARRAY;UMX2N,NPN,2,50V,40V,100MA,300M	
Q216	0504-000110	TR-DIGITAL;DTC114EU,NPN,200mW,10K-10Kohm	
Q218	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q219	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
Q220	0504-000177	TR-DIGITAL;DTC143EUA,NPN,200MW,4.7K-4.7K	
Q221	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
Q222	0504-000177	TR-DIGITAL;DTC143EUA,NPN,200MW,4.7K-4.7K	
Q223	0504-000105	TR-DIGITAL;DTA114EU,PNP,200MW,10K-10K,SC	
Q231	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
Q301	0506-000150	TR-ARRAY;UMX2N,NPN,2,50V,40V,100MA,300M	
Q302	0506-000150	TR-ARRAY;UMX2N,NPN,2,50V,40V,100MA,300M	
Q303	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q304	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q305	0506-000150	TR-ARRAY;UMX2N,NPN,2,50V,40V,100MA,300M	
Q306	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
Q350	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q351	0506-000146	TR-ARRAY;UMH6N,NPN,2,150MW,UM6,TP,68	
Q352	0506-000146	TR-ARRAY;UMH6N,NPN,2,150MW,UM6,TP,68	
Q353	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q354	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
Q355	0504-000107	TR-DIGITAL;DTA144EU,PNP,200mW,47K-47K,SC	
Q381	0501-000162	TR-SMALL SIGNAL;2SA1576,PNP,200mW,SC-70,	
Q382	0504-000113	TR-DIGITAL;DTC144EUA,NPN,200mW,47K-47K,S	
R000	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R103	2007-000099	R-CHIP;62Kohm,5%,1/16W,DA,TP,1608	
R104	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R105	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
R106	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R107	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
R108	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
R110	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R112	2007-000450	R-CHIP;180ohm,5%,1/16W,DA,TP,1608	
R113	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
R114	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
R115	2007-000450	R-CHIP;180ohm,5%,1/16W,DA,TP,1608	
R117	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	
R118	2007-000643	R-CHIP;270ohm,5%,1/16W,DA,TP,1608	
R119	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
R120	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R121	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
R122	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
R131	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
R132	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
R151	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
R152	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
R153	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R154	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R155	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R156	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R159	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
R160	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R162	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R163	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R165	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
R166	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R167	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R168	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R169	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
R171	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
R172	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R173	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
R174	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R177	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
R178	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
R201	2007-000219	R-CHIP;1.2Kohm,1%,1/16W,DA,TP,1608	

Loc.No	Part No	Desc & Spec	Remark
R202	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R203	2007-000683	R-CHIP;3.3Kohm,1%,1/16W,DA,TP,1608	
R204	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R205	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R206	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R208	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R209	2007-000091	R-CHIP;12Kohm,5%,1/16W,DA,TP,1608	
R210	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
R213	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R214	2007-000839	R-CHIP;39ohm,5%,1/16W,DA,TP,1608	
R215	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
R216	2007-000043	R-CHIP;1Kohm,1%,1/16W,DA,TP,1608	
R217	2007-000043	R-CHIP;1Kohm,1%,1/16W,DA,TP,1608	
R220	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	
R221	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
R222	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R223	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R224	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
R225	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
R226	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
R227	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
R228	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R231	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R232	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R233	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R234	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R236	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
R237	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R238	2007-000076	R-CHIP;330ohm,5%,1/16W,DA,TP,1608	
R239	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R240	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
R243	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R244	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R246	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R247	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R248	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R249	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R250	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R251	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R252	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R253	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R254	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R255	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R256	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
R257	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R258	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
R259	2007-000093	R-CHIP;20Kohm,5%,1/16W,DA,TP,1608	
R261	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R262	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R263	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R264	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R265	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R267	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R268	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R269	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R270	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R271	2007-000118	R-CHIP;390ohm,5%,1/16W,DA,TP,1608	
R272	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R273	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R274	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R275	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R276	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R277	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R278	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
R279	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
R280	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R281	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R282	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
R283	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
R284	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R285	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R286	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R287	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	

Loc.No	Part No	Desc & Spec	Remark
R288	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R292	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R295	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
R302	2007-001026	R-CHIP;560Kohm,5%,1/16W,DA,TP,1608	
R303	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R304	2007-000512	R-CHIP;2.4Kohm,5%,1/16W,DA,TP,1608	
R305	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R306	2007-001134	R-CHIP;68ohm,5%,1/16W,DA,TP,1608	
R307	2007-000643	R-CHIP;270ohm,5%,1/16W,DA,TP,1608	
R308	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
R309	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
R310	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R311	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	
R312	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R313	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
R314	2007-000839	R-CHIP;39ohm,5%,1/16W,DA,TP,1608	
R315	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
R316	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R317	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R319	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R320	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R321	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R322	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R326	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
R329	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	
R330	2007-000116	R-CHIP;120ohm,5%,1/16W,DA,TP,1608	
R331	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R332	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R335	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
R336	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	
R350	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R351	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R352	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R353	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
R354	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R355	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R356	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
R357	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R358	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R359	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
R360	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R361	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
R362	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R364	2007-000121	R-CHIP;820ohm,5%,1/16W,DA,TP,1608	
R366	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
R367	2007-000091	R-CHIP;12Kohm,5%,1/16W,DA,TP,1608	
R368	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R369	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R371	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
R381	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
R382	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
R396	2007-000458	R-CHIP;18Kohm,5%,1/16W,DA,TP,1608	
X201	2801-003240	CRYSTAL-SMD;4.433619MHz,20ppm,28-ABN,SER	
	AD44-30100H	**ADAPTER-AC POWER;110-220V,60HZ,AA-E4/SEU**	
C10	2306-000298	C-FILM,MPPF;220nF,20%,250V,TP,6.5x5.5x3m	
C11	2201-000808	C-CERAMIC,DISC;2.2nF,10%,400V,Y5P,12x7.5	
C12	2201-000808	C-CERAMIC,DISC;2.2nF,10%,400V,Y5P,12x7.5	
C13	2401-001567	C-AL;47uF,20%,400V,WT,-,18x20,10mm	
C14	2201-000808	C-CERAMIC,DISC;2.2nF,10%,400V,Y5P,12x7.5	
C15	2201-000808	C-CERAMIC,DISC;2.2nF,10%,400V,Y5P,12x7.5	
C16	2301-000140	C-FILM,PEF;10nF,10%,630V,16.5X9.5X5.7X,1	
C17	2203-001537	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
C18	2401-002180	C-AL;2.2UF,20%,50V,GP,TP,5X11,5MM	
C19	2203-000840	C-CERAMIC,CHIP;390PF,5%,50V,NPO,TP,2012,	
C20	2203-001576	C-CERAMIC,CHIP;150NF,+80-20%,50V,Z5U,TP,	
C21	2401-001184	C-AL;33UF,20%,35V,GP,-,6X11,5MM	
C22	2401-002168	C-AL;100UF,20%,50V,GP,TP,10X12.5,5M	
C23	2203-000199	C-CERAMIC,CHIP;100nF,+80-20%,50V,Z5U,TP,	
C50	2401-001591	C-AL;47uF,20%,6.3V,GP,5x7,2.5mm,	
C51	2203-001537	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
C52	2203-001537	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
C53	2401-001878	C-AL;1000UF,20%,16V,GP,BK,10X20MM,5	
C54	2401-001374	C-AL;470UF,20%,16V,WT,TP,10X12.5,2.	
C55	2203-000199	C-CERAMIC,CHIP;100nF,+80-20%,50V,Z5U,TP,	
C56	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012,	
C57	2401-001917	C-AL;1UF,20%,50V,-,TP,5X7MM,5	
C59	2401-001952	C-AL;4.7UF,20%,50V,-,TP,6.3X7,5	
C60	61453-131-105	C-CERAMIC.CHIP;GRM42-6Y5V105Z16 TAPG	
C61	2203-000199	C-CERAMIC,CHIP;100nF,+80-20%,50V,Z5U,TP,	
C62	B1100-0674	C-CERAMIC,CHIP;CK 73 Y5V 16V T 685-Z C32	
C64	2201-000913	C-CERAMIC,DISC;100NF,+80-20%,50V,Y5V,TP,	
C65	2202-000780	C-CERAMIC,MLC-AXIAL;100NF,+80-20%,50V,Y5	
C66	2203-000199	C-CERAMIC,CHIP;100nF,+80-20%,50V,Z5U,TP,	
C67	2203-000199	C-CERAMIC,CHIP;100nF,+80-20%,50V,Z5U,TP,	
CL10	64709-084-770	CLIP-FUSE;RBP4-1 1/2H 3A 0.4T	
CL11	64709-084-770	CLIP-FUSE;RBP4-1 1/2H 3A 0.4T	
D10	0402-000386	DIODE-BRIDGE;S1WB60,600V,1A,DIP-4	
D11	0402-000391	DIODE-RECTIFIER;ERA22-10,1000V,500MA,MSR	
D12	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
D13	0403-000646	DIODE-ZENER;RD20SB,20V,18.8-21.14V,200mW	
D14	0403-000648	DIODE-ZENER;RD4.7SB,4.7V,4.4-4.92,200mW,	
D15	0403-000647	DIODE-ZENER;RD24SB,24V,22.86-25.66V,200m	
D16	0402-000391	DIODE-RECTIFIER;ERA22-10,1000V,500MA,MSR	
D17	0402-000391	DIODE-RECTIFIER;ERA22-10,1000V,500MA,MSR	
D51	0404-000135	DIODE-SCHOTTKY;ESAC85M-009,90V,10A,TO-22	
D52	0402-000165	DIODE-RECTIFIER;1N5819,40V,1A,DO-41,TP	
D53	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
D54	0407-000116	DIODE-ARRAY;DAP202K,80V,100mA,CK2-3,SOT	
D55	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
D57	0403-000649	DIODE-ZENER;RD5.1S,5.1V,4.96-5.22V,200mW	
F10	B3065-0202	FUSE;DEMKO FST 250V 1.25A 5X20MM S505 C	
IC11	AC14-12011C	IC;FA5304S,SOP,8P TAPE	
IC12	AC13-22001B	IC-HYBRID;PC113(LY),-,DIP,-	
IC12	B4161-0037	PHOTO-COUPLER;TLP621-GR ST	
IC51	1201-000203	IC-OP AMP;3414,SOP,8P,300MIL,DUAL,-,PLAS	
IC52	AC14-12006R	IC;TK11640N,TO-92S,3P TAPE	
J51	B3040-0068	JACK-DC;PI3 HEC0740-01-010 3P	
L10	AC27-32001F	COIL-LINE FILTER;BSF-2123,20MH,2OHM,ST,-	
L11	A1247-0053	FILTER-EMI BEAD;BFS3565A0L SB 100OHM/100	
L51	2702-000112	INDUCTOR-RADIAL;10uH,5%,6x6.4mm	
L52	AC27-12001F	COIL-CHOKE;100UH,J,-,-,-,100UH-J RA 1KHZ	
LED51	B4150-0287	LED-DISPLAY;LN086WP38 ORG/GRN PI1.8	
PCB01	66029-1084-00	P.C.B-AA-E2N;FR4 CS95 T1.6 W139 L62	
PWR01	AC39-12022M	POWER-CORD;CP2,KJ-0201,BLK,YH396-32V,1.8	
Q10	0505-001044	FET-SILICON;SSS3N80,N,800V,1.8A,5ohm,35W	
Q51	0502-000399	TR-POWER;2SB1127S,PNP,-25V,-20V,-5A,1W,	
Q52	62129-101-110	TRANSISTOR.CHIP;KSR 1102 (REEL)	
Q53	0502-000431	TR-POWER;2SB1203S,PNP,-60V,-50V,-5A,1W,	
Q54	62129-101-110	TRANSISTOR.CHIP;KSR 1102 (REEL)	
Q55	0504-000158	TR-DIGITAL;KSR2104,PNP,200MW,47K-47K,SOT	
Q56	0504-000158	TR-DIGITAL;KSR2104,PNP,200MW,47K-47K,SOT	
Q57	0504-000158	TR-DIGITAL;KSR2104,PNP,200MW,47K-47K,SOT	
R01	2007-000029	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	
R02	2007-000029	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	
R03	2007-000029	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	
R04	2007-000029	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	
R05	2007-000033	R-CHIP;0ohm,5%,1/8W,DA,TP,3216	
R06	2007-000033	R-CHIP;0ohm,5%,1/8W,DA,TP,3216	
R10	2001-000474	R-CARBON;2.7Mohm,5%,1/4W,AA,TP,2.4x6.4m	
R12	A1014-0079	R-CEMENT;RWC 2W I 3R3-J ST ABCO	
R13	2001-001000	R-CARBON;82Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R14	2001-001000	R-CARBON;82Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R15	2007-001212	R-CHIP;82Kohm,5%,1/8W,DA,TP,3216	
R16	2001-001000	R-CARBON;82Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
R17	2003-000307	R-METAL OXIDE;47Kohm,5%,2W,AD,TP,6x16mm	
R19	2003-000111	R-METAL OXIDE;0.47ohm,5%,1W,AD,TP,4.3x12	
R20	2007-000572	R-CHIP;220ohm,5%,1/10W,DA,TP,2012	
R21	2007-000781	R-CHIP;33ohm,5%,1/10W,DA,TP,2012	
R22	2007-000248	R-CHIP;1.5Mohm,5%,1/10W,DA,TP,2012	
R24	2007-000781	R-CHIP;33ohm,5%,1/10W,DA,TP,2012	
R25	2007-001177	R-CHIP;8.2Kohm,5%,1/10W,DA,TP,2012	
R51	2007-000312	R-CHIP;10ohm,5%,1/8W,DA,TP,3216	
R52	2007-000515	R-CHIP;2.7Kohm,1%,1/10W,DA,TP,2012	

Loc.No	Part No	Desc & Spec	Remark
R53	2007-000218	R-CHIP;1.2Kohm,1%,1/10W,DA,TP,2012	
R54	2007-000639	R-CHIP;270ohm,1%,1/10W,DA,TP,2012	
R55	2007-000282	R-CHIP;100Kohm,5%,1/10W,DA,TP,2012	
R56	2007-000572	R-CHIP;220ohm,5%,1/10W,DA,TP,2012	
R57	2007-000518	R-CHIP;2.7Kohm,5%,1/10W,DA,TP,2012	
R58	2007-000282	R-CHIP;100Kohm,5%,1/10W,DA,TP,2012	
R59	2007-000361	R-CHIP;12ohm,5%,1/10W,DA,TP,2012	
R60	2007-000928	R-CHIP;470ohm,1%,1/10W,DA,TP,2012	
R61	2007-000218	R-CHIP;1.2Kohm,1%,1/10W,DA,TP,2012	
R62	2007-000868	R-CHIP;4.7Kohm,1%,1/10W,DA,TP,2012	
R63	2007-000868	R-CHIP;4.7Kohm,1%,1/10W,DA,TP,2012	
R64	2007-000658	R-CHIP;27ohm,5%,1/10W,DA,TP,2012	
R65	2003-000102	R-METAL OXIDE;0.1ohm,5%,1W,AD,TP,4.3x12m	
R66	2007-000355	R-CHIP;12Kohm,5%,1/10W,DA,TP,2012	
R67	2007-000221	R-CHIP;1.2Kohm,5%,1/10W,DA,TP,2012	
R68	2007-000493	R-CHIP;2.2Kohm,5%,1/10W,DA,TP,2012	
R69	2007-000931	R-CHIP;470ohm,5%,1/10W,DA,TP,2012	
R70	B1004-0442	R-METAL OXIDE;RS 3W N 43-J ERG3SJ430H	
R71	2007-000300	R-CHIP;10Kohm,5%,1/10W,DA,TP,2012	
R72	2007-000300	R-CHIP;10Kohm,5%,1/10W,DA,TP,2012	
R73	2007-000468	R-CHIP;1Kohm,5%,1/10W,DA,TP,2012	
R74	B1004-0442	R-METAL OXIDE;RS 3W N 43-J ERG3SJ430H	
R75	2007-000409	R-CHIP;15Kohm,5%,1/10W,DA,TP,2012	
R76	2007-000409	R-CHIP;15Kohm,5%,1/10W,DA,TP,2012	
R77	2007-000300	R-CHIP;10Kohm,5%,1/10W,DA,TP,2012	
R78	2007-000409	R-CHIP;15Kohm,5%,1/10W,DA,TP,2012	
R79	2007-000300	R-CHIP;10Kohm,5%,1/10W,DA,TP,2012	
R80	2007-000822	R-CHIP;390ohm,5%,1/10W,DA,TP,2012	
R81	2007-000409	R-CHIP;15Kohm,5%,1/10W,DA,TP,2012	
R82	2007-000518	R-CHIP;2.7Kohm,5%,1/10W,DA,TP,2012	
R83	2007-000822	R-CHIP;390ohm,5%,1/10W,DA,TP,2012	
R84	2007-000653	R-CHIP;27Kohm,5%,1/10W,DA,TP,2012	
R85	2007-000409	R-CHIP;15Kohm,5%,1/10W,DA,TP,2012	
R86	2007-000653	R-CHIP;27Kohm,5%,1/10W,DA,TP,2012	
R87	2003-000146	R-METAL OXIDE;100ohm,5%,1W,AD,TP,4.3x12m	
R90	2007-000950	R-CHIP;47ohm,5%,1/8W,DA,TP,3216	
R91	2007-000950	R-CHIP;47ohm,5%,1/8W,DA,TP,3216	
R92	2007-000950	R-CHIP;47ohm,5%,1/8W,DA,TP,3216	
R93	2007-000950	R-CHIP;47ohm,5%,1/8W,DA,TP,3216	
R94	2007-000653	R-CHIP;27Kohm,5%,1/10W,DA,TP,2012	
R95	2007-000221	R-CHIP;1.2Kohm,5%,1/10W,DA,TP,2012	
R96	2007-000267	R-CHIP;1.8Kohm,5%,1/10W,DA,TP,2012	
R97	2001-000429	R-CARBON;1Kohm,5%,1/8W,AA,TP,1.8x3.2mm	
SW51	3404-000239	SWITCH-TACT;15V,20mA,130+-40gf,6x6mm,-	
T10	AC26-80001F	TRANS-POWER;EI25X19,AC90/260V,50Hz,-	
W10	3711-000178	CONNECTOR-HEADER;1WALL,2P,1R,3.96mm,STRA	
XT51	64539-102-012	CERAMIC RESONATOR;FCR 4.0MC5	
IC53	AD09-12001F	IC-MICOM;TMP47C241N,STICK,28P	
148	**AD90-10822G**	**ASSY-TERMINAL;A2-P/J,SAMSUNG**	
CN001	AD39-20826B	LEAD CONNECTOR-ASSY;TP,51021,53023,7P,13	
D001	0402-001166	DIODE-RECTIFIER;RL203,200V,2.0A,DO-15,TP	
J001	AD37-22001B	JACK-DC POWER;4.4MM,DDAE-9724,3P,BULK,BL	
JP001	3811-000389	WIRE-NO SHEATH CU;SPCW,300V,52.4mm,1/0.5	
PS001	3601-001121	FUSE-PC BOARD;125V,2A,SLOW-BLOW,CERAMIC,	
125	**AD90-10831A**	**ASSY-FRONT BOARD;VP-A22,FRONT(MOD-GYRO)**	
C801	2401-002206	C-AL;47UF,20%,6.3V,GP,TP,5X7,5MM	
CN802	3711-000779	CONNECTOR-HEADER;BOX,2P,1R,1.25MM,ANGLE,	
GY801	AC39-22018S	SENSOR;-,-,-,ENC-05DA,-	
GY802	AC39-22018T	SENSOR;-,-,-,ENC-05DB,-	
RE801	AD59-60060E	MODULE-REMOCON;DP,PNA4612M00XC,38KHz,940	
	AD90-10822N	**ASSY-REAR BOARD;A2-PJ,SAMSUNG**	
J851	3722-001202	JACK-PHONE;7P,3.6MM,AG,YEL,NO	
SW851	3408-000298	SWITCH-SLIDE;5V,1A,-,-	
VR851	2101-001018	VR-ROTARY;50KOHM,30%,0.03W,TOP	
CN851	3711-003315	CONNECTOR-HEADER;BOX,18P,2R,0.8MM,SMD-A,	
R851	2007-000277	R-CHIP;100Kohm,1%,1/10W,DA,TP,2012	
R852	2007-000931	R-CHIP;470ohm,5%,1/10W,DA,TP,2012	
R853	2007-000454	R-CHIP;18Kohm,1%,1/10W,DA,TP,2012	
R854	2007-000771	R-CHIP;33Kohm,1%,1/10W,DA,TP,2012	
R855	2007-000771	R-CHIP;33Kohm,1%,1/10W,DA,TP,2012	
R856	2007-001124	R-CHIP;68Kohm,1%,1/10W,DA,TP,2012	
R857	2007-000931	R-CHIP;470ohm,5%,1/10W,DA,TP,2012	
R858	2007-000454	R-CHIP;18Kohm,1%,1/10W,DA,TP,2012	
R859	2007-000771	R-CHIP;33Kohm,1%,1/10W,DA,TP,2012	
R860	2007-000771	R-CHIP;33Kohm,1%,1/10W,DA,TP,2012	
SW852	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW853	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW854	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW855	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW856	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW857	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW858	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW859	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW860	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW861	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
SW862	3404-000241	SWITCH-TACT;15V,20MA,-,6.8X6.2MM,-	
	AD90-10822W	**ASSY-CCD BOARD;A2-P/J,PAL**	
CC01	2203-000140	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,1608,-,	
CC02	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CC03	2404-000190	C-TA,CHIP;22uF,20%,16V,-,5832,-,TP	
CC04	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CC05	2404-000130	C-TA,CHIP;10uF,20%,20V,-,6032,-,TP	
CC06	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CC07	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CNC01	3711-003315	CONNECTOR-HEADER;BOX,18P,2R,0.8MM,SMD-A,	
DC01	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
DC02	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
QC01	0505-000180	FET-SILICON;2SK1070PIETR,-,150MW,SOT	
RC01	2007-000109	R-CHIP;1Mohm,5%,1/16W,DA,TP,1608	
RC02	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
RC03	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
RC05	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RC06	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
618	**AD90-10822T**	**ASSY-EVF BOARD;A2-P/J,PAL**	**VP-A20/A22**
CE18	2201-000911	C-CERAMIC,DISC;1.2NF,10%,1KV,Y5P,BK,10X5	
CNE03	AC03-12001B	SOCKET-CRT;SOCKET FINDER,PI10 40MM,-,-,-	
FTB01	AC26-32001B	TRANS-FLYBACK;ECX-C2806D,0.6INCH,4.8V	
LE02	AC27-32001B	COIL-LINEARITY;230UH-15%,PI0.12,T,-,-	
CE01	2203-000308	C-CERAMIC,CHIP;120PF,5%,50V,NPO,TP,1608,	
CE02	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE03	2404-000112	C-TA,CHIP;100uF,20%,6.3V,WT,7343,-,TP	
CE04	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	
CE05	2404-000175	C-TA,CHIP;2.2uF,20%,6.3V,WT,3216,1.1mm,T	
CE06	2309-001001	C-FILM,CHIP;100nF,5%,16V,3.2x2.5x2.0mm,-	
CE07	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE08	2404-000128	C-TA,CHIP;10uF,20%,16V,-,TP,6032,-	
CE09	2203-000357	C-CERAMIC,CHIP;150pF,5%,50V,NPO,TP,1608,	
CE10	2402-000144	C-AL,SMD;3.3uF,20%,50V,GP,4x5.4mm,-,TP	
CE11	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE12	2404-000112	C-TA,CHIP;100uF,20%,6.3V,WT,7343,-,TP	
CE13	2404-000112	C-TA,CHIP;100uF,20%,6.3V,WT,7343,-,TP	
CE14	2404-000112	C-TA,CHIP;100uF,20%,6.3V,WT,7343,-,TP	
CE15	2309-000143	C-FILM,CHIP;3.9nF,5%,100V,-,-,TP	
CE16	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE17	2402-000144	C-AL,SMD;3.3uF,20%,50V,GP,4x5.4mm,-,TP	
CNE01	3711-000922	CONNECTOR-HEADER;BOX,4P,1R,1.25mm,SMD-A,	
CNE02	3711-002173	CONNECTOR-HEADER;BOX,4P,1R,1.5,STRAIGHT,	
DE01	0407-000151	DIODE-ARRAY;MA153,40V,100mA,C2-3,SOT-23,	
DE02	0401-000173	DIODE-SWITCHING;MA151K,40V,100mA,-,3nS,S	
DE03	0401-000166	DIODE-SWITCHING;MA158-TX,200V,100mA,-,-,	
ICE01	AC14-12006W	IC-LINEAR;KA7007,SOP,-	
LE01	2703-000409	INDUCTOR-SMD;47uH,10%,3.2x2.5x2.2mm	
QE01	0501-000674	TR-SMALL SIGNAL;2SA1179,PNP,200MW,SOT-23	
QE02	0501-000238	TR-SMALL SIGNAL;2SD968A,NPN,1W,SC-62,-,1	
QE03	0501-000674	TR-SMALL SIGNAL;2SA1179,PNP,200MW,SOT-23	
RE01	2007-000637	R-CHIP;270Kohm,5%,1/16W,DA,TP,1608	

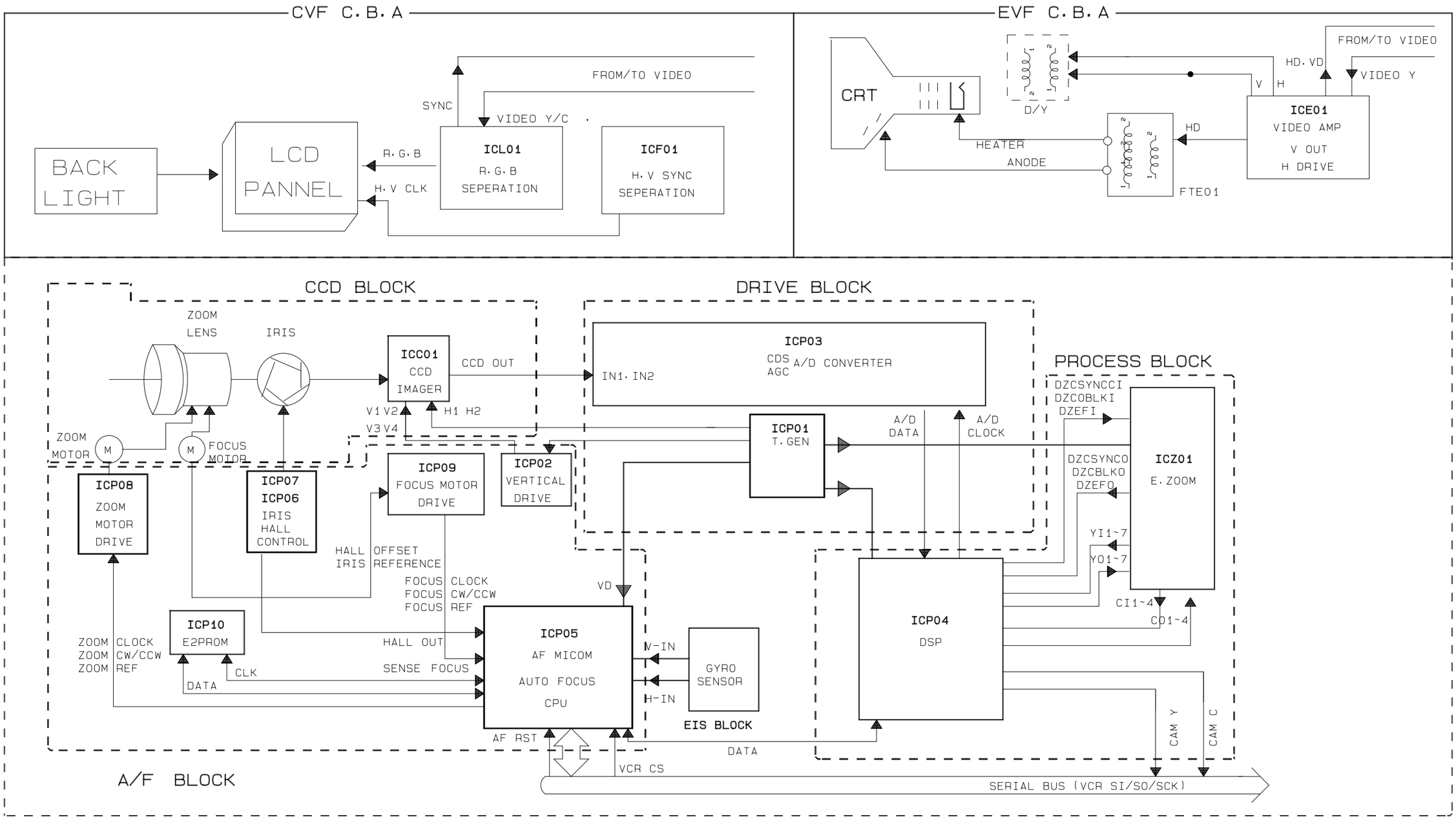
Loc.No	Part No	Desc & Spec	Remark
RE02	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
RE03	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
RE04	2007-000107	R-CHIP;470Kohm,5%,1/16W,DA,TP,1608	
RE05	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RE06	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RE07	2007-000637	R-CHIP;270Kohm,5%,1/16W,DA,TP,1608	
RE08	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
RE09	2007-000695	R-CHIP;3.3ohm,5%,1/16W,DA,TP,1608	
RE10	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
RE11	B1335-0002	THERMISTOR-CHIP;NTC CS 3216 3BH 471KC 47	
RE12	2007-000931	R-CHIP;470ohm,5%,1/10W,DA,TP,2012	
RE13	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RE14	2007-000081	R-CHIP;2.7Kohm,5%,1/16W,DA,TP,1608	
RE15	2007-000965	R-CHIP;5.1Kohm,5%,1/16W,DA,TP,1608	
RE16	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RE17	2007-001056	R-CHIP;6.2Kohm,5%,1/16W,DA,TP,1608	
RE18	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	
RE19	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
RE20	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	
RE21	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RE22	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
RE23	2007-000029	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	
RE24	2007-000029	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	
RE25	2007-000689	R-CHIP;3.3MOHM,5%,1/10W,DA,TP,2012	
RE26	2007-000689	R-CHIP;3.3MOHM,5%,1/10W,DA,TP,2012	
RE27	2007-000462	R-CHIP;18ohm,5%,1/10W,DA,TP,2012	
VRE01	2104-001014	VR-SMD;50KOHM,25%,0.15W,TOP	
VRE02	2104-001013	VR-SMD;220ohm,25%,0.15W,TOP	
VRE03	2104-000178	VR-SMD;1MOHM,30%,1/20W,TOP	
613	**AD90-10828V**	**ASSY-CVF BOARD;VP-A20,A2-CVF-PAL**	**VP-A21/A23**
CE01	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CE03	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CE04	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CE05	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CE09	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE10	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE11	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE12	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE13	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE14	2404-000107	C-TA,CHIP;100nF,20%,35V,-,TP,3216,-	
CE15	2404-000107	C-TA,CHIP;100nF,20%,35V,-,TP,3216,-	
CE16	2203-001634	C-CERAMIC,CHIP;33nF,10%,50V,X7R,TP,1608,	
CE17	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE18	2404-000153	C-TA,CHIP;1uF,20%,20V,-,3216,-,TP	
CE20	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE21	2404-000153	C-TA,CHIP;1uF,20%,20V,-,3216,-,TP	
CE22	2404-000204	C-TA,CHIP;3.3uF,20%,10V,-,3216,-,TP	
CE23	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CE25	2404-000153	C-TA,CHIP;1uF,20%,20V,-,3216,-,TP	
CE26	2404-000251	C-TA,CHIP;470nF,20%,35V,-,3216,-,TP	
CE27	2404-000204	C-TA,CHIP;3.3uF,20%,10V,-,3216,-,TP	
CE28	2203-000715	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,1608	
CE29	2203-001607	C-CERAMIC,CHIP;220pF,5%,50V,CH,1608,1.6m	
CE30	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,1608,-,T	
CE31	2203-001683	C-CERAMIC,CHIP;68PF,5%,50V,CH,TP,1608,1.	
CE32	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CE33	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE34	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE35	2203-001656	C-CERAMIC,CHIP;470pF,5%,50V,CH,1608,1.6m	
CE36	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	
CE37	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE38	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE39	2203-000477	C-CERAMIC,CHIP;1uF,+80-20%,16V,Y5V,TP,20	
CE40	2404-000153	C-TA,CHIP;1uF,20%,20V,-,3216,-,TP	
CE42	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE43	2404-000112	C-TA,CHIP;100uF,20%,6.3V,WT,7343,-,TP	
CE44	2404-000153	C-TA,CHIP;1uF,20%,20V,-,3216,-,TP	
CE45	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
CE46	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CE50	2404-000139	C-TA,CHIP;10uF,20%,6.3V,-,3216,-,TP	
CE51	2203-001556	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	

Loc.No	Part No	Desc & Spec	Remark
CE52	2203-001588	C-CERAMIC,CHIP;18pF,5%,50V,CH,1608,1.6mm	
CNE01	3708-001143	CONNECTOR-FPC/FC/PIC;12P,0.8mm,SMD-A,SN	
CNE02	3708-000514	CONNECTOR-FPC/FC/PIC;16P,0.5MM,SMD-S,SN	
CNE03	3711-002613	CONNECTOR-HEADER;3WALL,3P,1R,1.25MM,SMD-	
DE01	0405-000123	DIODE-VARACTOR;1T369,34V,10nA,DSM,TP	
DE02	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
DE03	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
DE04	0401-000171	DIODE-SWITCHING;MA111,80V,100mA,-,3nS,SM	
ICE01	1003-001104	IC-LCD DRIVER;CXA2503R,QFP,64P,400MIL,TR	
ICE02	AC11-12001G	IC-EEPROM;AT24C02N-10SC,QFP,-	
ICE03	AD14-10001C	IC-AMP;NJM2904V,SSOP,OP-AMP	
ICE04	0801-000301	IC-CMOS LOGIC;7W04,INVERTER,SOP,8P,150MI	
ICE05	0801-000301	IC-CMOS LOGIC;7W04,INVERTER,SOP,8P,150MI	
ICE06	0801-002001	IC-CMOS LOGIC;7W74,D FLIP FLOP,SOP,8P,12	
LE03	2703-001493	INDUCTOR-SMD;10uH,5%,2.5x2.0x1.8	
LE04	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
LE05	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
LE06	2703-000398	INDUCTOR-SMD;10UH,10%,3.2X2.5X2.2MM	
LE07	2703-000403	INDUCTOR-SMD;22uH,10%,3.2x2.5x2.2mm	
QE01	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
QE02	0506-000138	TR-ARRAY;IMZ1,NPN/PNP,1,50V,40V,100MA,3	
QE03	0504-000211	TR-DIGITAL;DTC143TU,NPN,200MW,4.7K,SC-70	
QE04	0504-000211	TR-DIGITAL;DTC143TU,NPN,200MW,4.7K,SC-70	
QE05	0504-000211	TR-DIGITAL;DTC143TU,NPN,200MW,4.7K,SC-70	
QE06	0504-000211	TR-DIGITAL;DTC143TU,NPN,200MW,4.7K,SC-70	
QE07	0504-000211	TR-DIGITAL;DTC143TU,NPN,200MW,4.7K,SC-70	
QE08	0501-000218	TR-SMALL SIGNAL;2SC4081,NPN,200mW,UMT,TP	
RE01	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RE02	2007-000092	R-CHIP;15Kohm,5%,1/16W,DA,TP,1608	
RE03	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
RE04	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	
RE07	2007-000091	R-CHIP;12Kohm,5%,1/16W,DA,TP,1608	
RE08	2007-000637	R-CHIP;270Kohm,5%,1/16W,DA,TP,1608	
RE09	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
RE10	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RE11	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
RE12	2007-000655	R-CHIP;27Kohm,5%,1/16W,DA,TP 200	
RE13	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
RE14	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RE16	2007-001157	R-CHIP;750ohm,5%,1/16W,DA,TP,160	
RE17	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RE18	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RE19	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	
RE20	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RE21	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RE22	2007-000614	R-CHIP;24Kohm,1%,1/16W,DA,TP,1608	
RE23	2007-000239	R-CHIP;1.5Kohm,1%,1/16W,DA,TP,1608	
RE24	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
RE25	2007-000455	R-CHIP;18Kohm,1%,1/16W,DA,TP,1608	
RE26	2007-000614	R-CHIP;24Kohm,1%,1/16W,DA,TP,1608	
RE27	2007-000683	R-CHIP;3.3Kohm,1%,1/16W,DA,TP,1608	
RE28	2007-000067	R-CHIP;15Kohm,1%,1/16W,DA,TP,1608	
RE29	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RE30	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
RE31	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
RE32	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	
RE34	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RE40	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
RE44	2007-001442	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
RE45	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
RE47	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
RE51	2007-000123	R-CHIP;1.5Kohm,5%,1/16W,DA,TP,1608	
RE55	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
RE56	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
RE57	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
RE58	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	
RE61	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RE62	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
RE63	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
XE01	2801-003126	CRYSTAL-SMD;4.433619MHz,30ppm,28-ABN,16p	

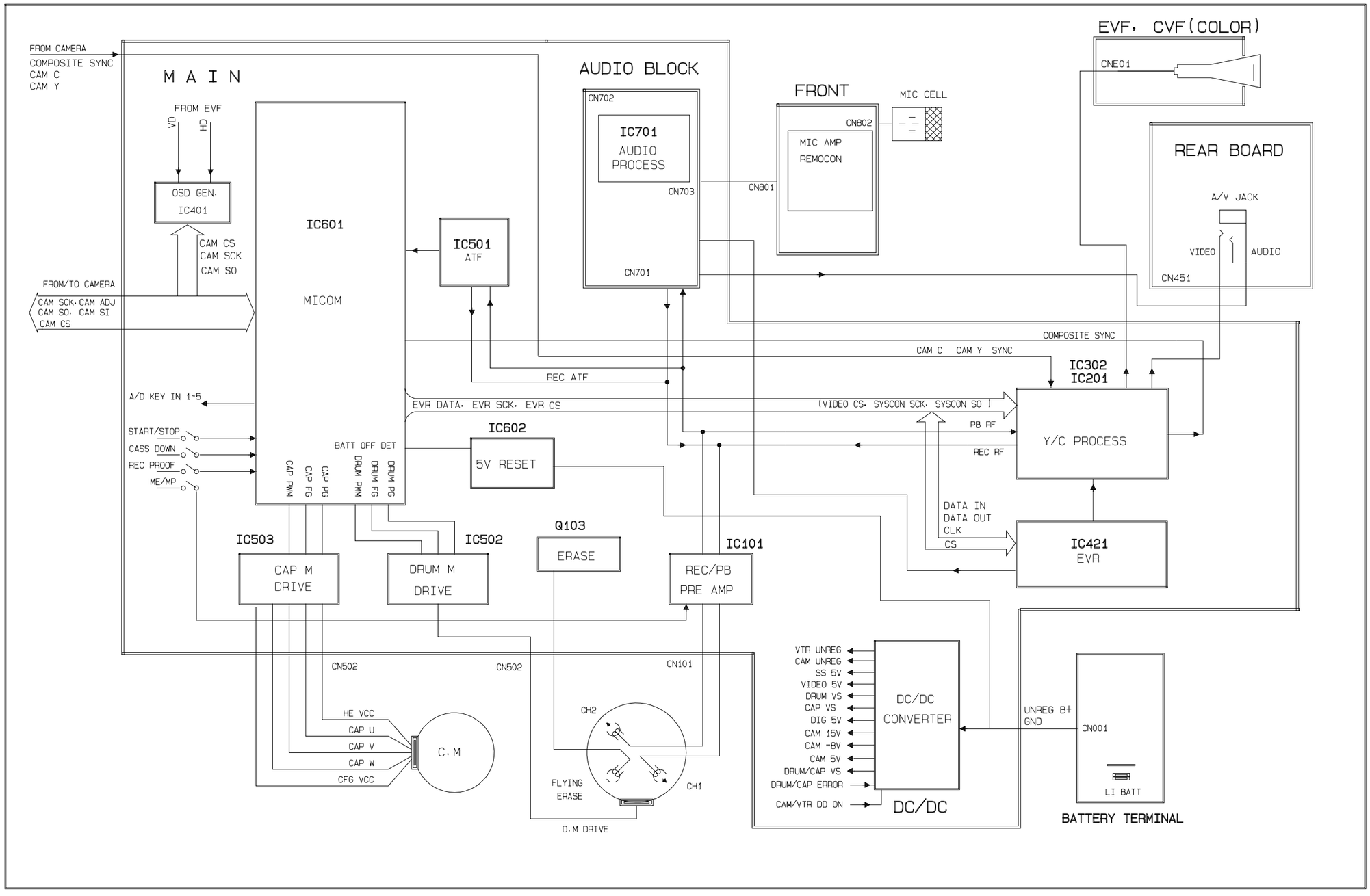
8. Block Diagrams

		Page
8-1	Overall Block Diagram (Camera)	8-2
8-2	Overall Block Diagram (VCR)	8-3
8-3	DC/DC Converter	8-4
8-4	Drum Servo	8-5
8-5	Capstan Servo	8-6
8-6	Video Playback	8-7
8-7	Video Record	8-8
8-8	Audio(Mono)	8-9
8-9	Camera Main/CCD	8-10

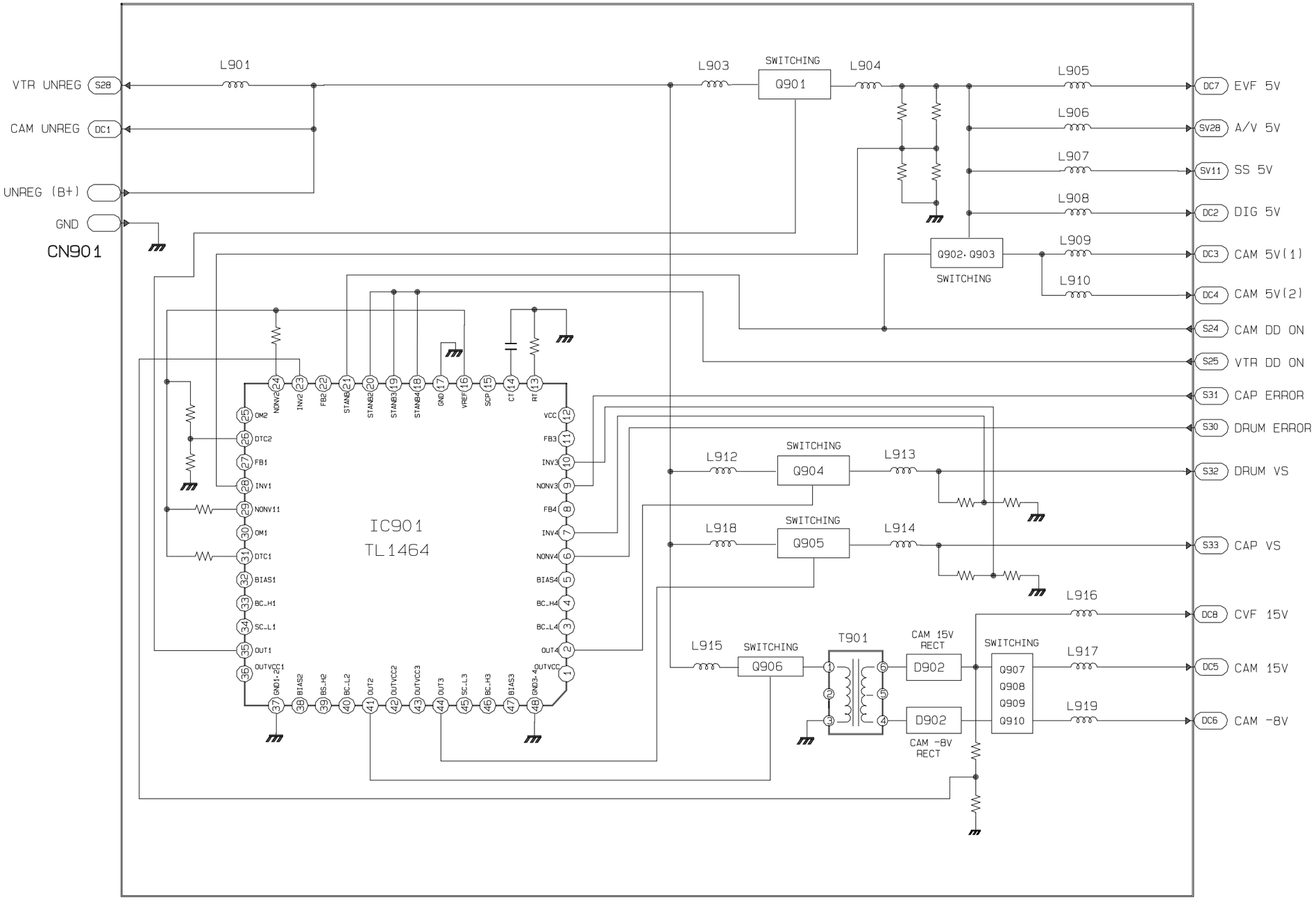
8-1 Overall Block Diagram (Camera)



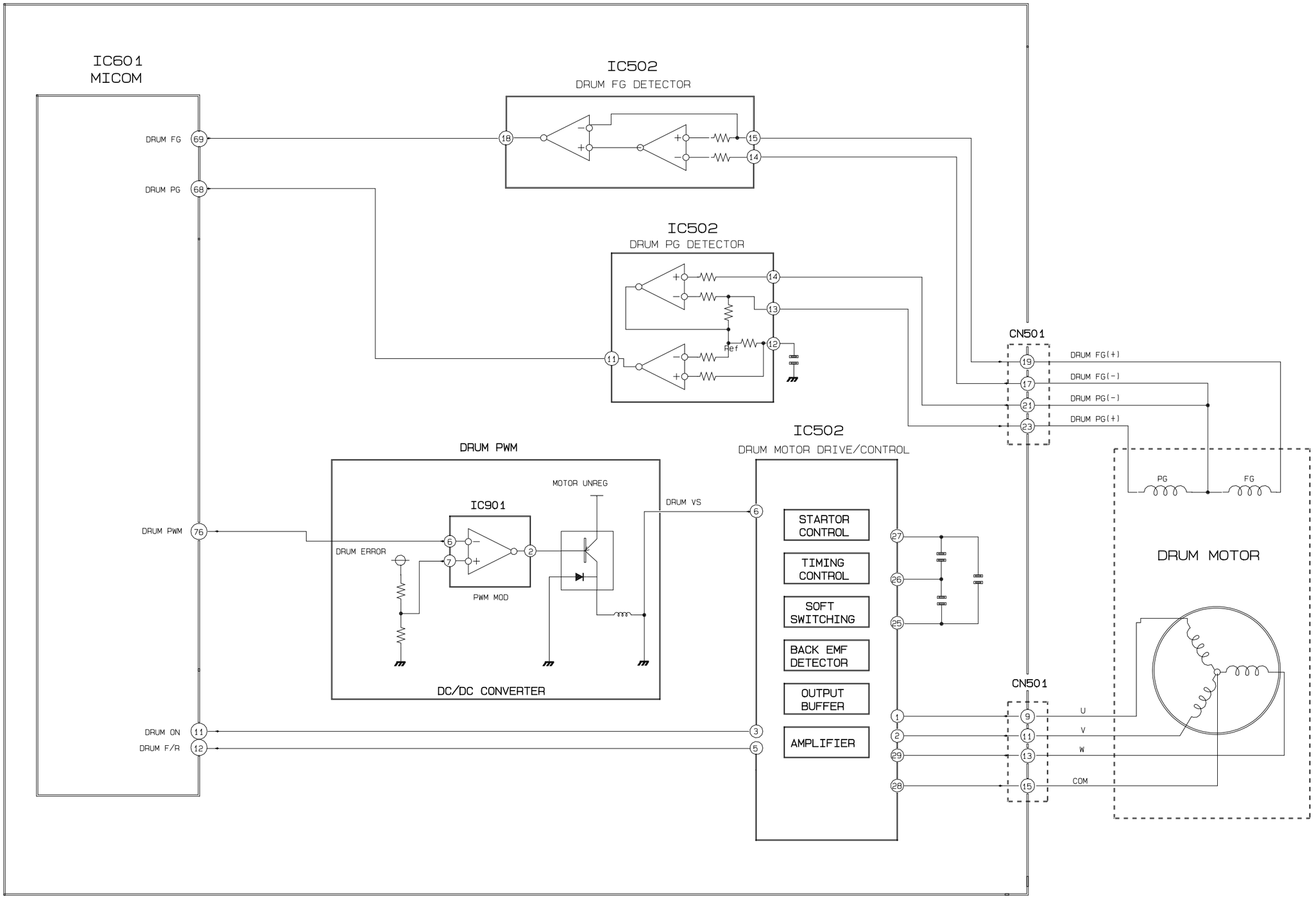
8-2 Overall Block Diagram (VCR)



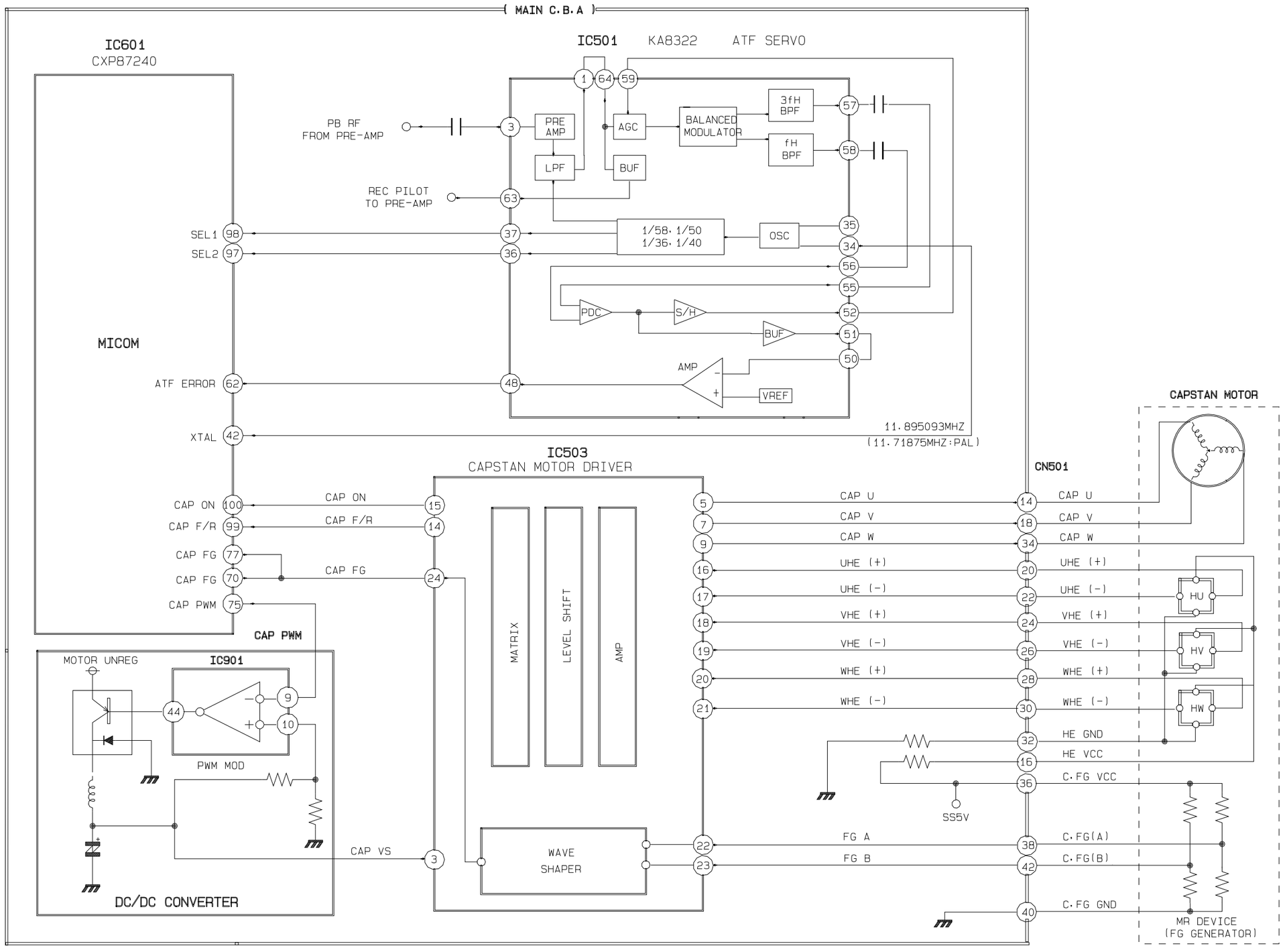
8-3 DC/DC Converter



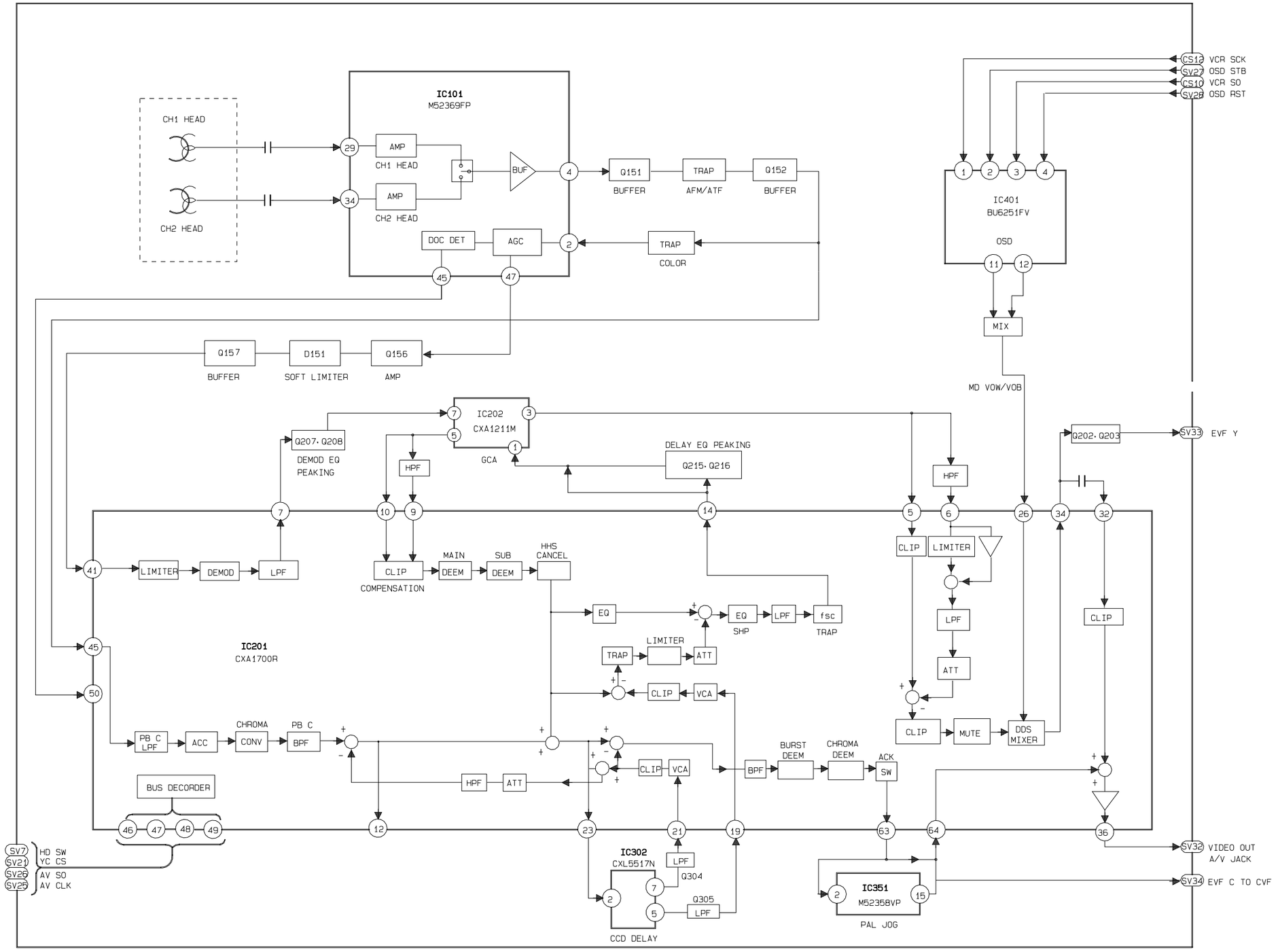
8-4 Drum Servo



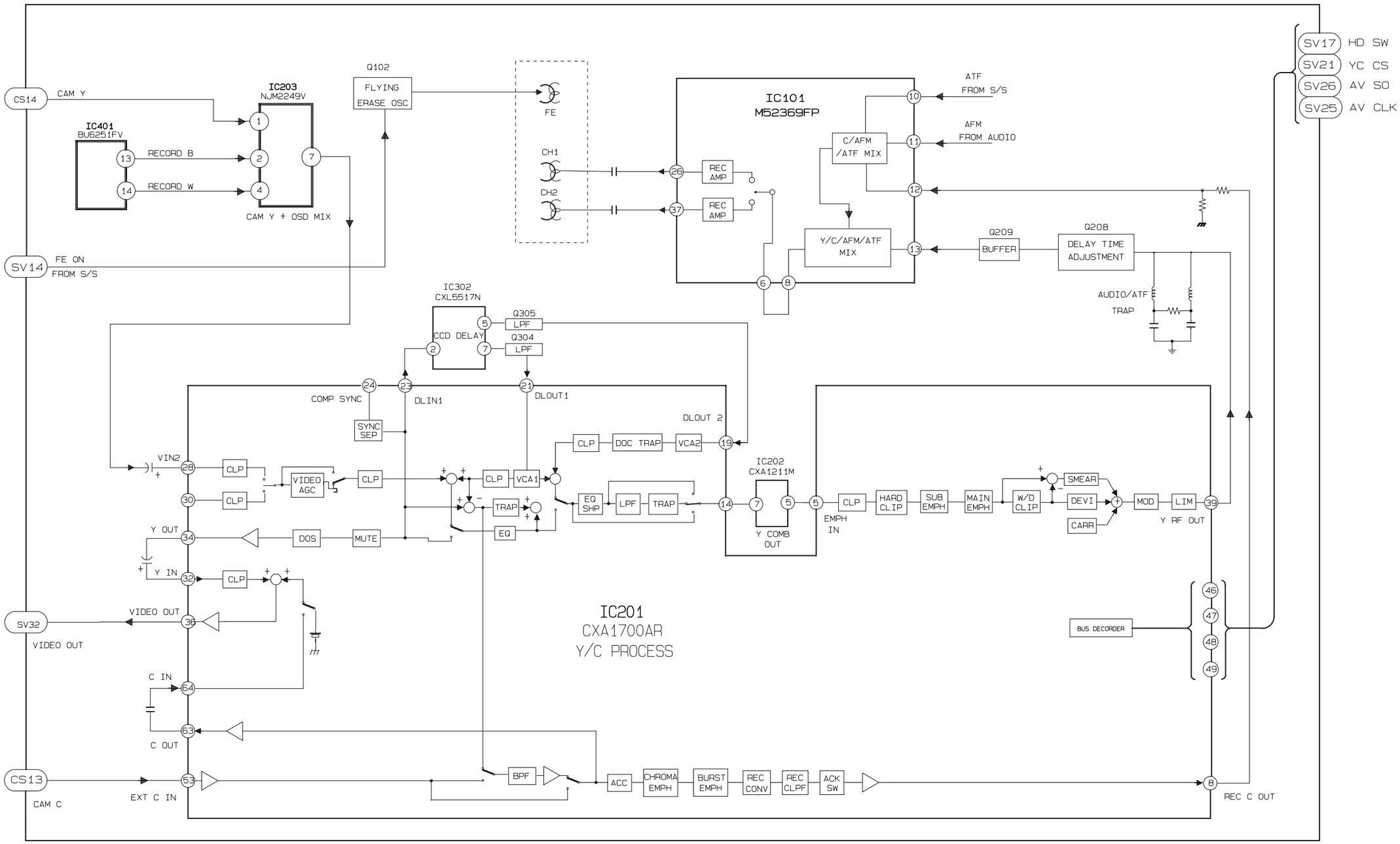
8-5 Capstan Servo



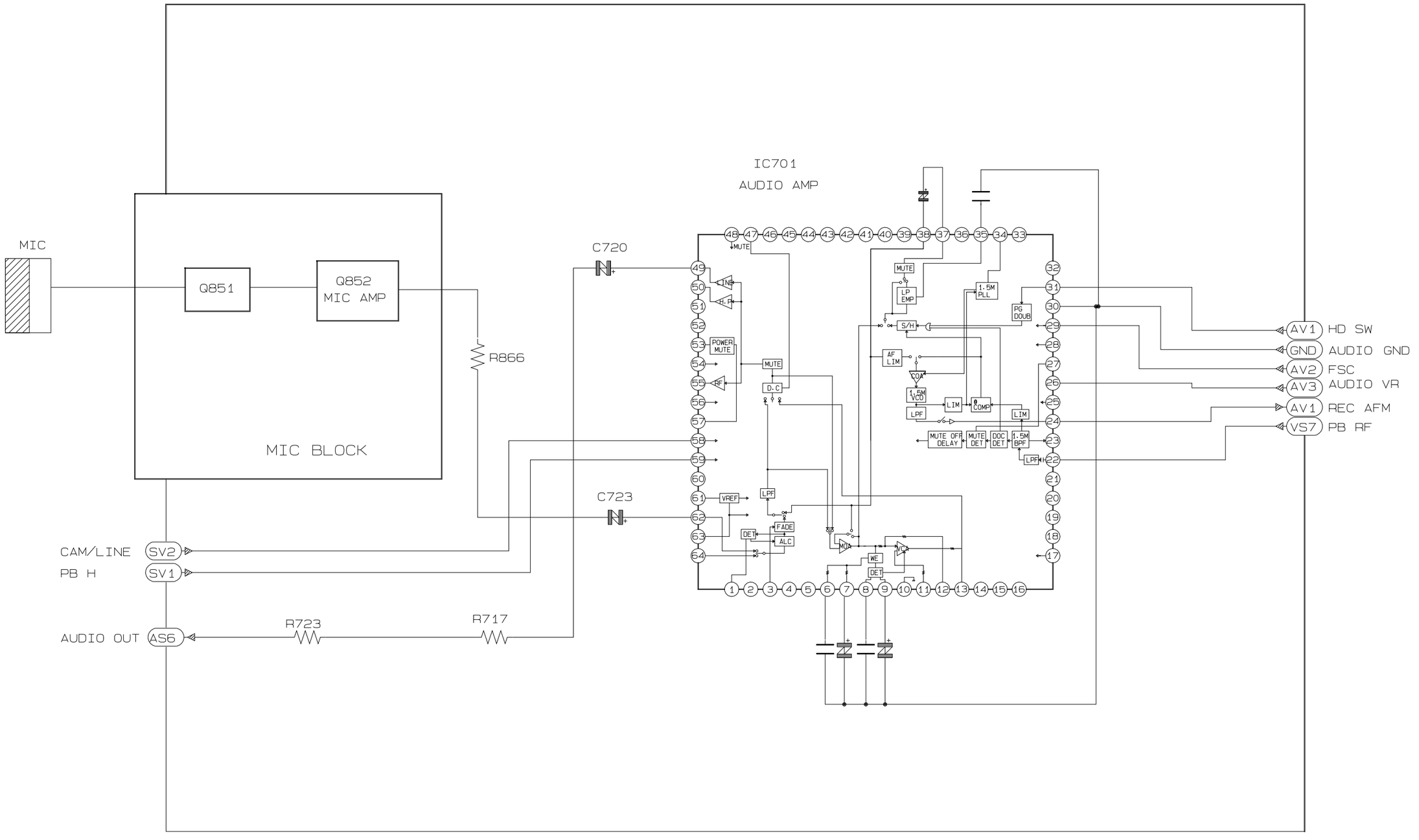
8-6 Video Playback



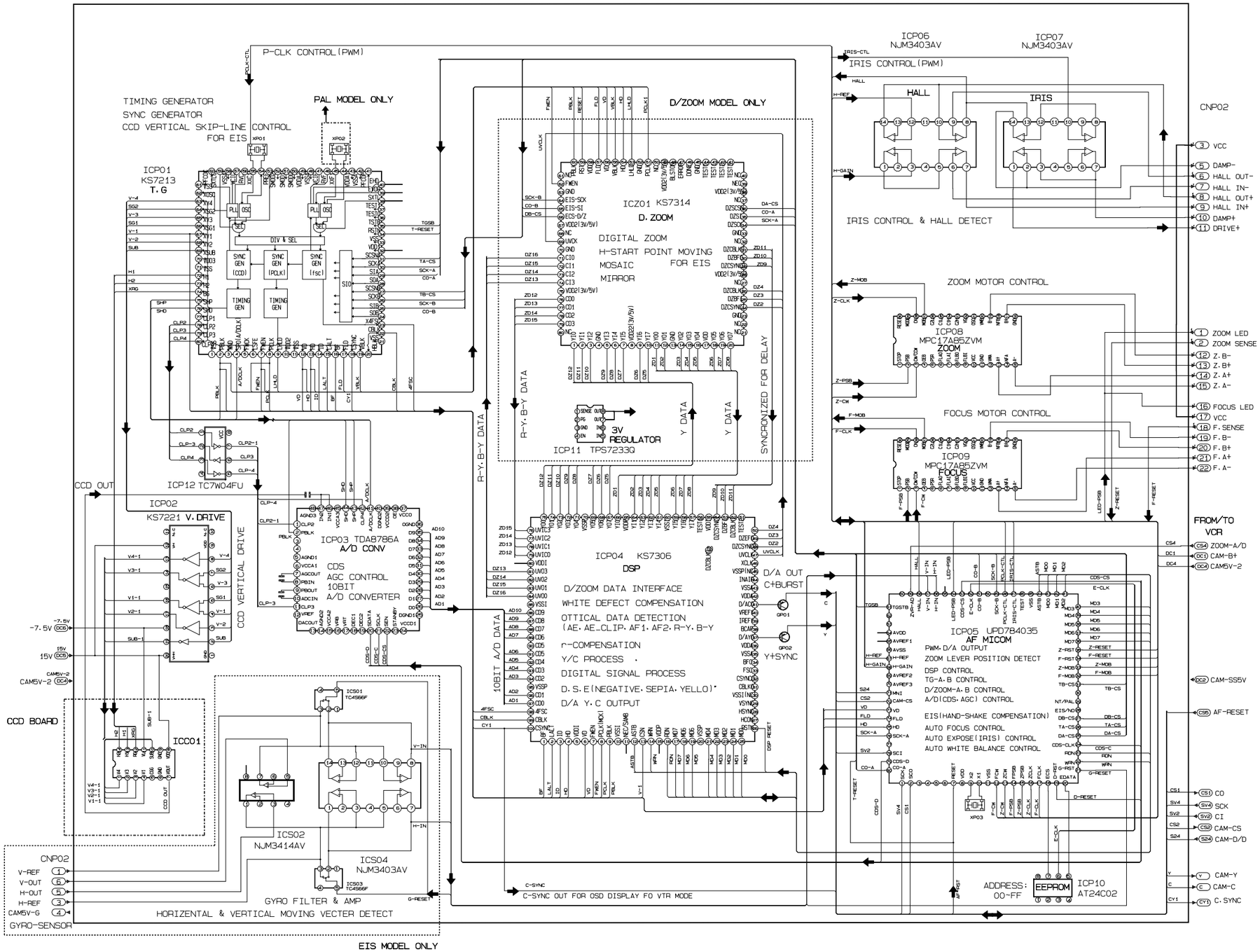
8-7 Video Record



8-8 Audio


IC701
AUDIO AMP
MIC
Q851
Q852
MIC AMP
MIC BLOCK
R866
C720
C723
R723
R717
CAM/LINE
SV2
PB H
SV1
AUDIO OUT
AS6
AV1 HD SW
GND AUDIO GND
AV2 FSC
AV3 AUDIO VR
AV1 REC AFM
VS7 PB RF
MUTE
POWER MUTE
D.C
VREF
LPF
FADE
ALC
DET
LP EMP
S/H
AF LIM
COA
1.5M VCO
LIM
COMP
1.5M PLL
PG DOUB
MUTE OFF DELAY
MUTE DET
DOC DET
1.5M BPF
WE

8-9 Camera Main/CCD



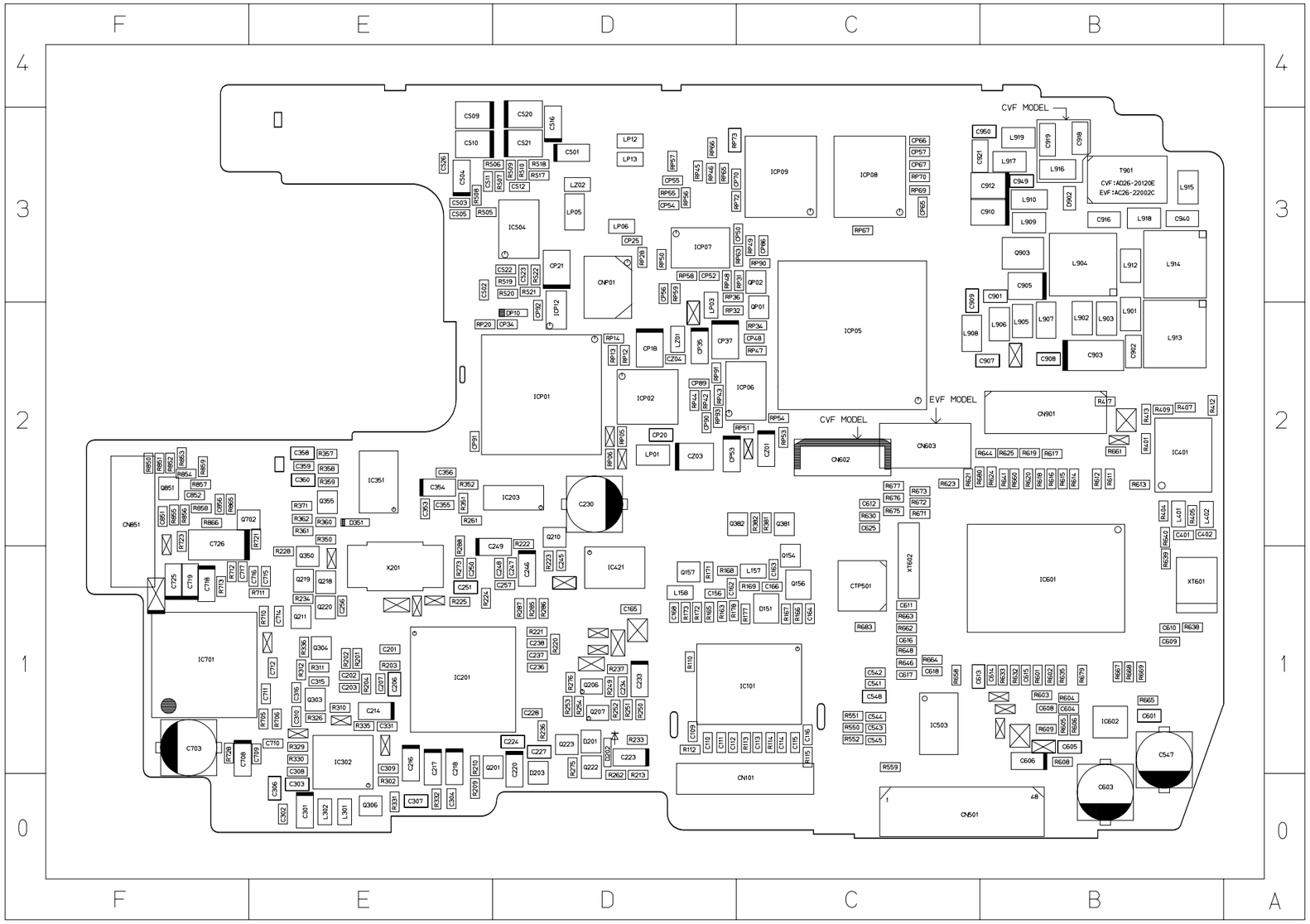
9. PCB Diagrams

		Page
9-1	Main	9-2
9-2	Rear	9-4
9-3	Front	9-5
9-4	Terminal	9-5
9-5	CVF (VP-A21/A23)	9-6
9-6	EVF (VP-A20/A22)	9-6
9-7	CCD	9-7

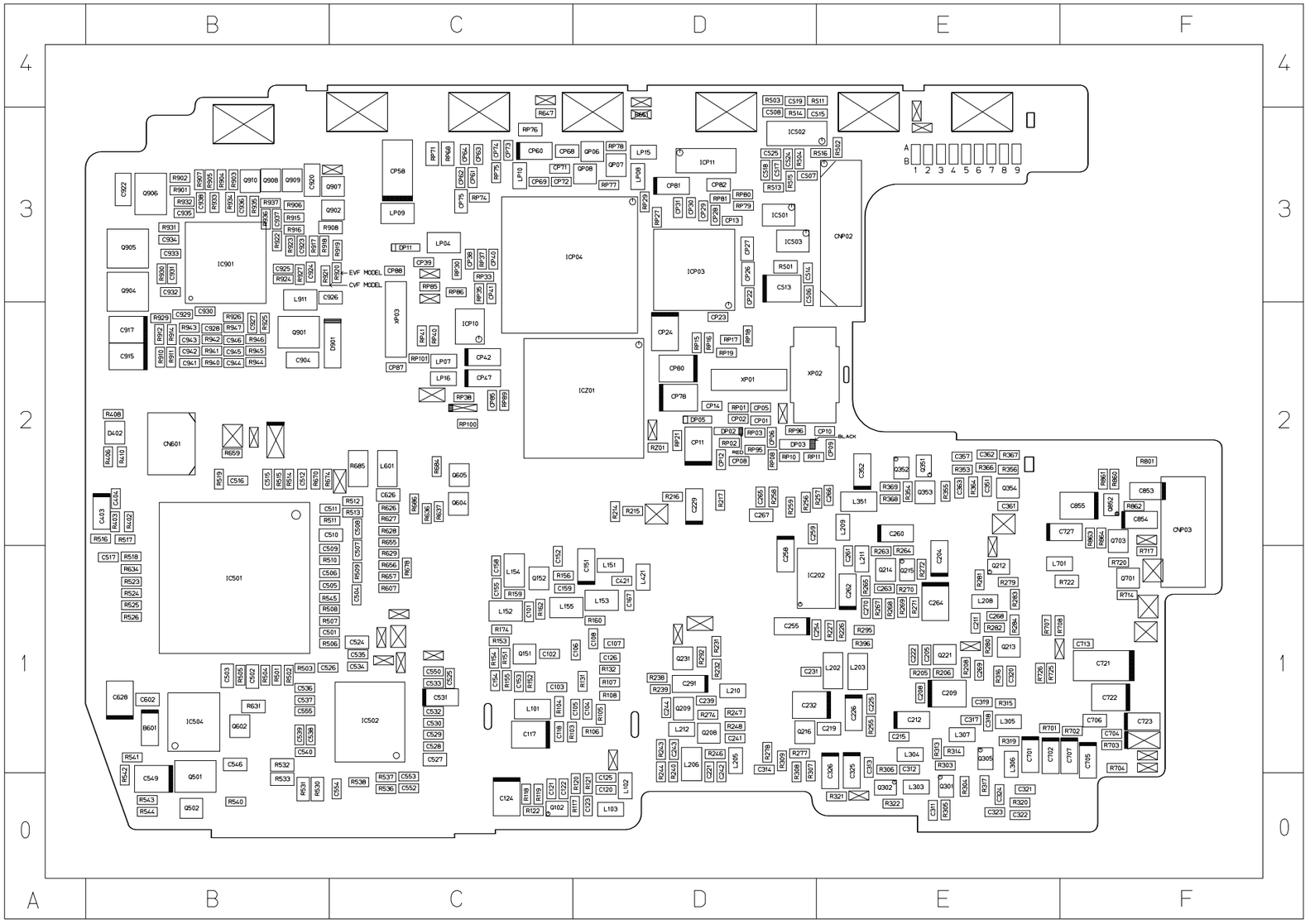
9-1 Main

I C	TRANSISTOR	COIL
IC101 (C1)	Q154 (C1)	L157 (C1)
IC201 (E1)	Q156 (C1)	L158 (D1)
IC203 (D2)	Q157 (D1)	L207 (E1)
IC302 (E1)	Q201 (D1)	L301 (E0)
IC401 (B2)	Q206 (D1)	L302 (E0)
IC421 (D1)	Q207 (D1)	L401 (B2)
IC503 (C1)	Q210 (D1)	L402 (B2)
IC601 (B1)	Q211 (E1)	L901 (B2)
IC602 (B1)	Q219 (E1)	L902 (B2)
IC701 (F1)	Q220 (E1)	L903 (B2)
ICP01 (D2)	Q222 (D1)	L904 (B3)
ICP02 (D2)	Q223 (D1)	L905 (B2)
ICP05 (C2)	Q303 (E1)	L906 (B2)
ICP06 (C2)	Q304 (E1)	L907 (B2)
ICP07 (D3)	Q306 (E0)	L908 (C2)
ICP08 (C3)	Q381 (C2)	L909 (B3)
ICP09 (C3)	Q382 (C2)	L910 (B3)
ICP12 (D2)	Q401 (B2)	L912 (B3)
ICS04 (D3)	Q702 (E2)	L913 (B2)
	Q851 (F2)	L914 (B3)
	Q903 (B3)	L915 (B3)
CONNECTOR	QP01 (C2)	L916 (B3)
	QP02 (C3)	L917 (B3)
CN101 (C0)		L918 (B3)
CN501 (C0)		L919 (B3)
CN602 (C2)		LP01 (D2)
CN603 (C2)	DIODE	LP03 (D2)
CN851 (F2)	D151 (C1)	LP05 (D3)
CN901 (B2)	D201 (D1)	LP06 (D3)
CNP01 (D2)	D202 (D1)	LP12 (D3)
CTP501 (C1)	D203 (D0)	LP13 (D3)
	D902 (B3)	LZ01 (D2)
	DP10 (D2)	LZ02 (D3)

TRANS	X-TAL
T901 (B3)	X201 (E1)
	XT601 (B1)
	XT602 (C1)



(Component Side)



COIL

L101 (C1)
L102 (D0)
L103 (D0)
L151 (D1)
L152 (C1)
L153 (D1)
L154 (C1)
L155 (C1)
L202 (E1)
L203 (E1)
L205 (D1)
L206 (D1)
L209 (E1)
L210 (D1)
L211 (E1)
L212 (D1)
L305 (E1)
L306 (E1)
L351 (E2)
L421 (D1)
L601 (C2)
L701 (E1)
L911 (B2)
LP04 (C3)
LP09 (C3)
LP07 (C2)
LP08 (D3)
LP10 (C3)
LP15 (D3)
LP16 (C2)

TRANSISTOR

Q102 (C0)
Q151 (C1)
Q152 (C1)
Q208 (D1)
Q209 (D1)
Q214 (E1)
Q215 (E1)
Q216 (D1)
Q231 (D1)
Q302 (E0)
Q305 (E1)
Q352 (E2)
Q501 (B0)
Q502 (B0)
Q602 (B1)
Q604 (C2)
Q605 (C2)
Q701 (F1)
Q703 (F1)
Q852 (F2)
Q901 (B2)
Q902 (B3)
Q904 (B2)
Q905 (B3)
Q906 (B3)
Q907 (B3)
Q908 (B3)
Q909 (B3)
Q910 (B3)
QP06 (D3)
QP07 (D3)
QP08 (D3)

I C

IC202 (D1)
IC501 (B1)
IC502 (C1)
IC504 (B1)
IC901 (B3)
ICP03 (D3)
ICP04 (C3)
ICP10 (C2)
ICP11 (D3)
ICS01 (D3)
ICS02 (D3)
ICS03 (D3)
ICZ01 (D2)

X-TAL

XP01 (D2)
XP03 (C2)

DIODE

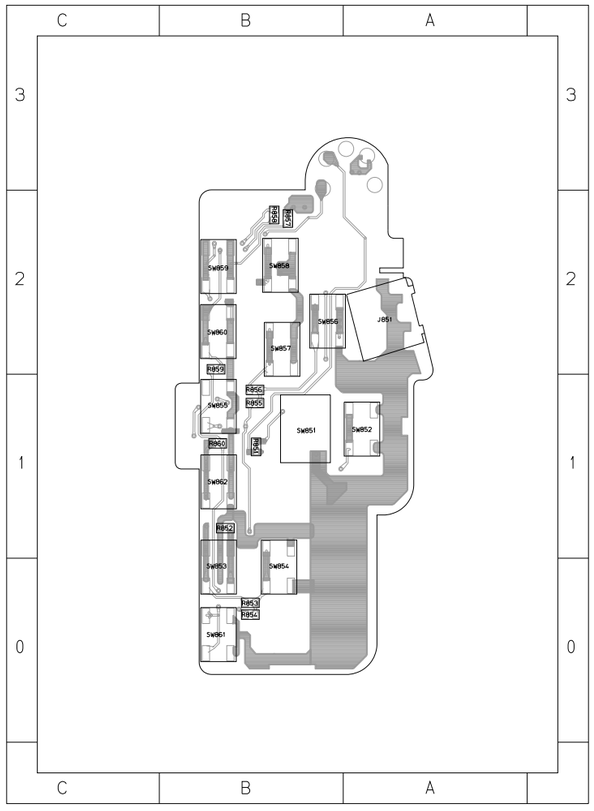
D402 (B2)
D901 (B2)
DP02 (D2)
DP05 (D2)
DP11 (C3)

CONNECTOR

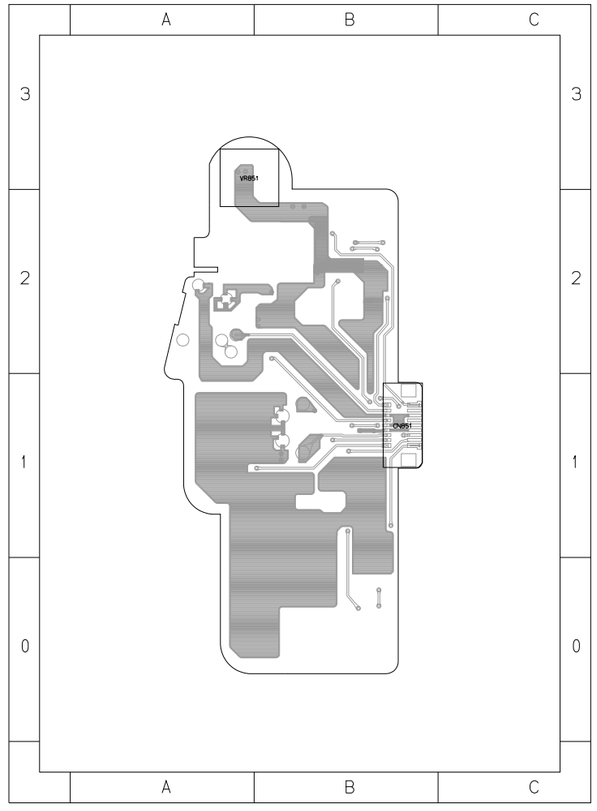
CN601 (B2)
CNP02 (E3)
CNP03 (F1)

(Conductor Side)

9-2 Rear

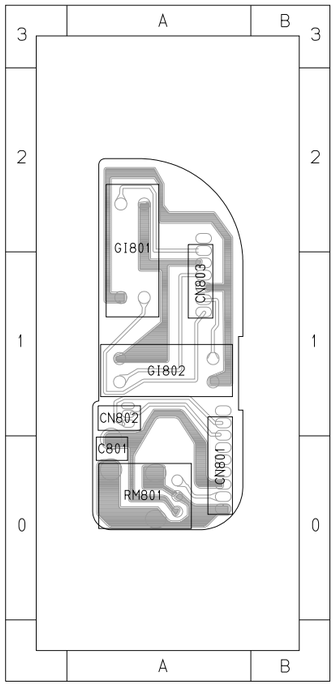


(Component Side)

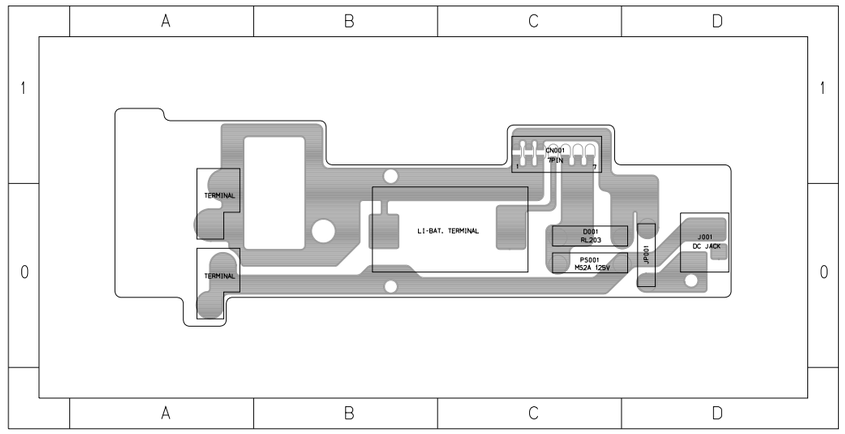


(Conductor Side)

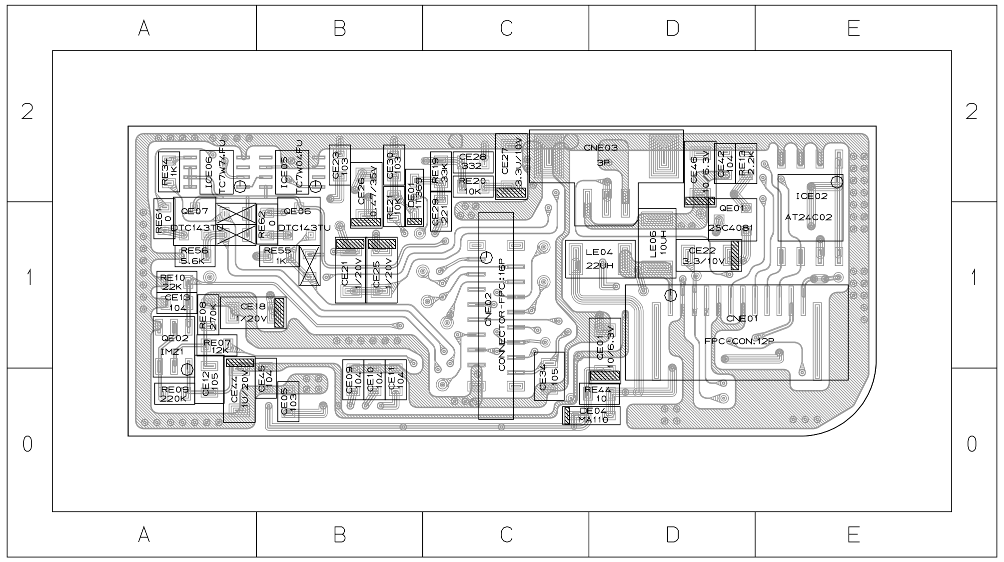
9-3 Front



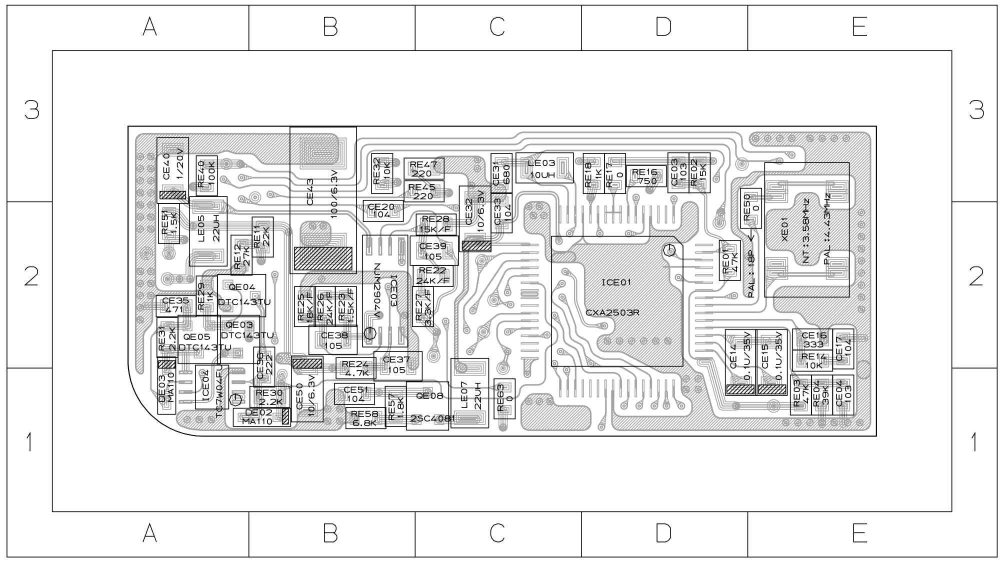
9-4 Terminal



9-5 CVF (VP-A21/A23)



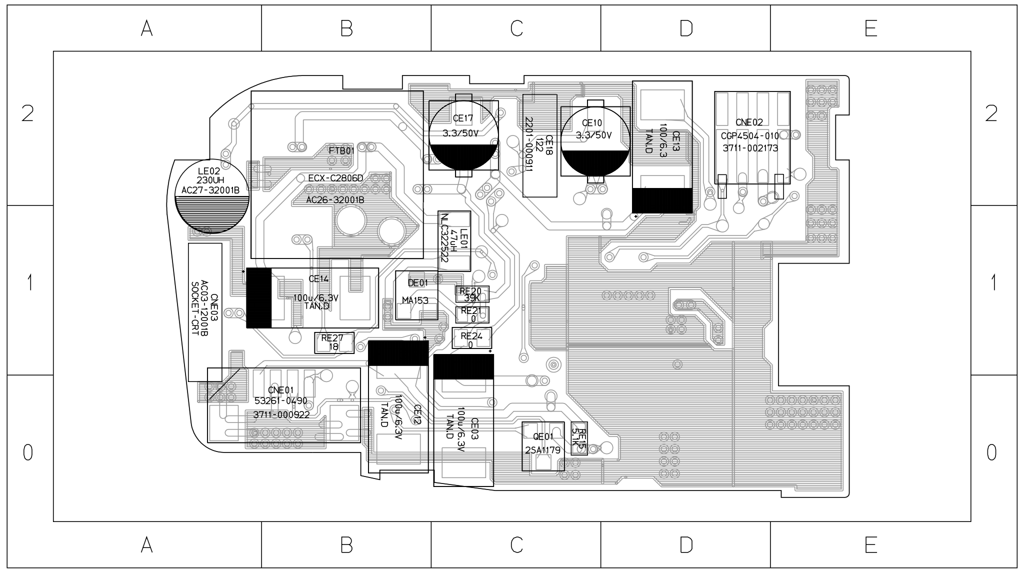
1D	CNE01
1C	CNE02
2D	CNE03
1E	ICE02
2B	ICE05
2A	ICE06
1B	QE06
1A	QE07
1A	QE02

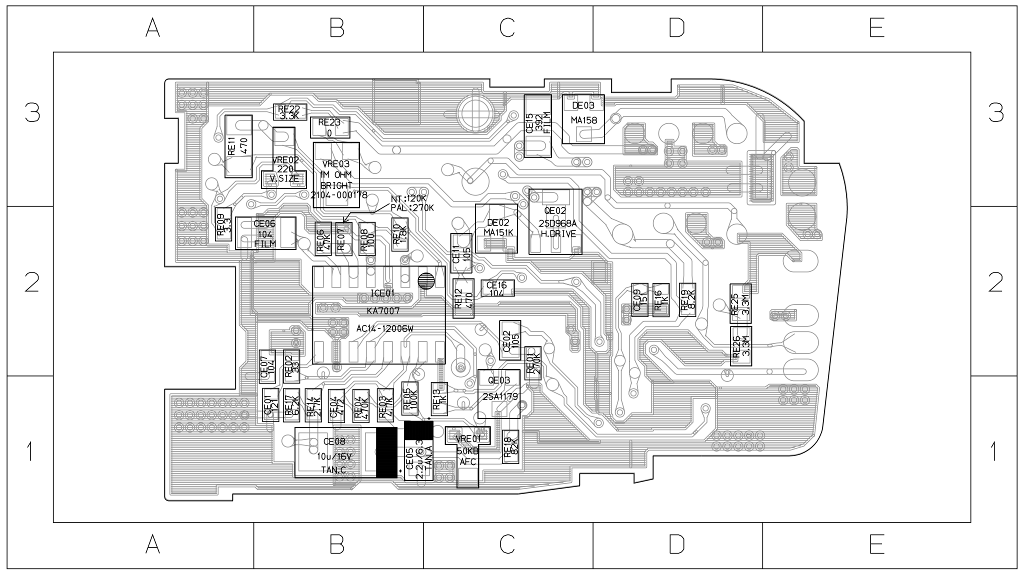


(Component Side)

(Conductor Side)

9-6 EVF (VP-A20/VP-A22)

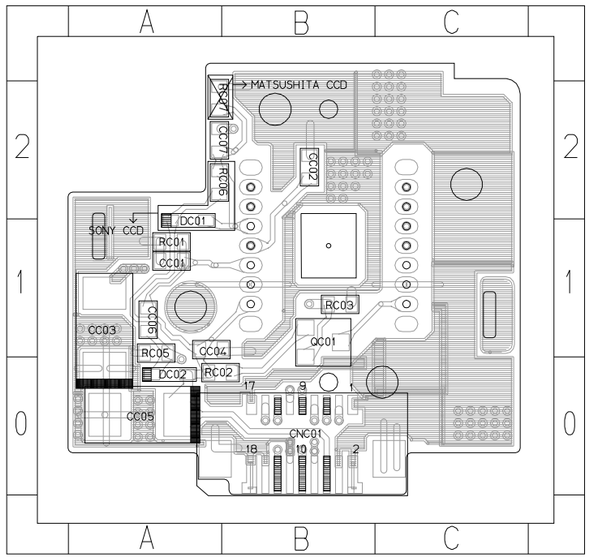




(Component Side)

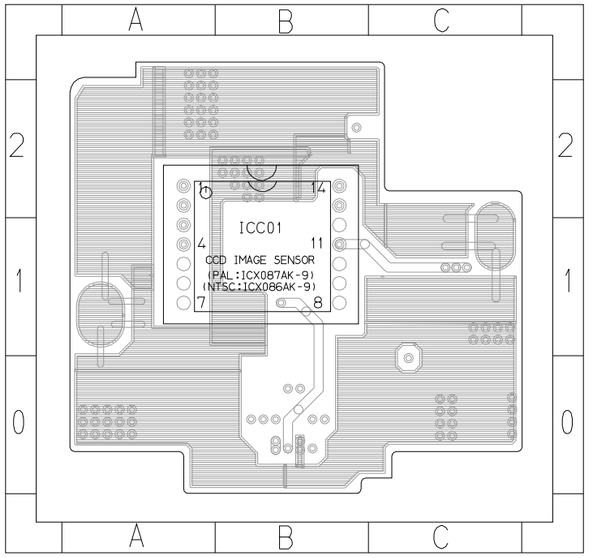
(Conductor Side)

9-7 CCD



CNC01 0B
QC01 1B

(Component Side)

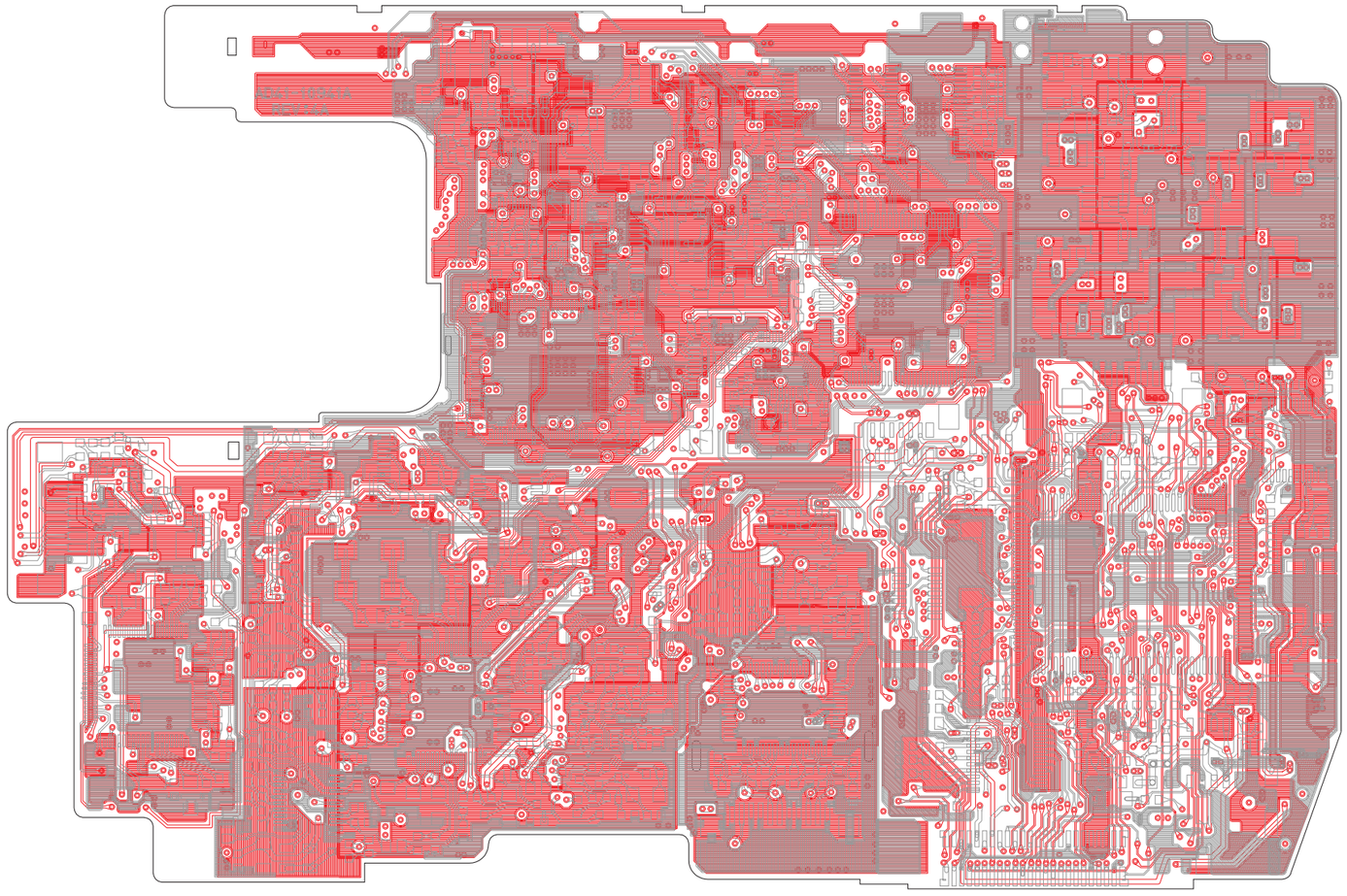


ICC01 1B

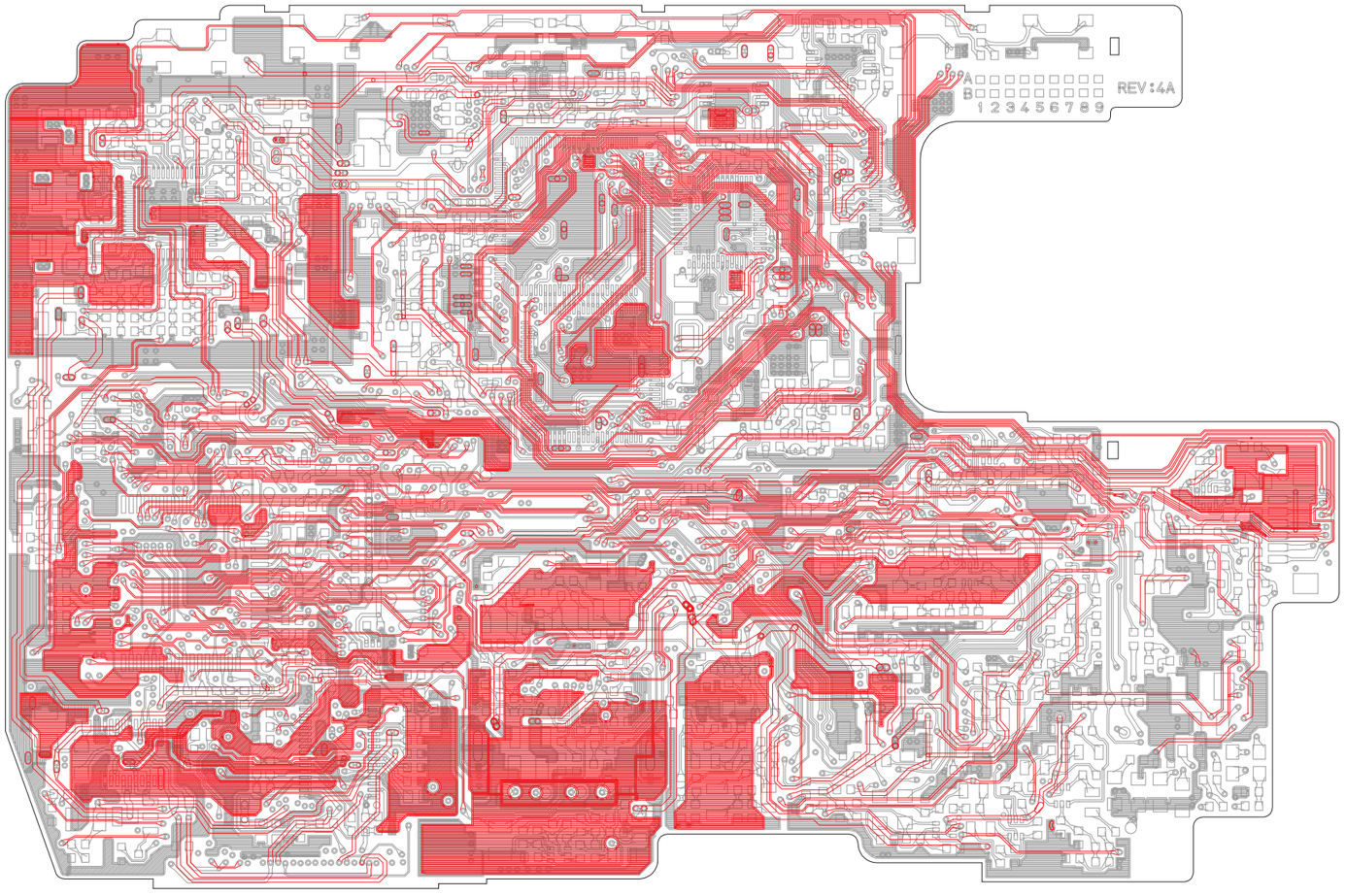
(Conductor Side)

MEMO

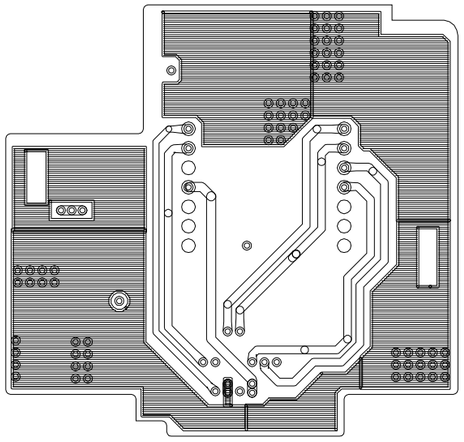
9-1 MAIN -2 (COMPONENT - PATTERN)



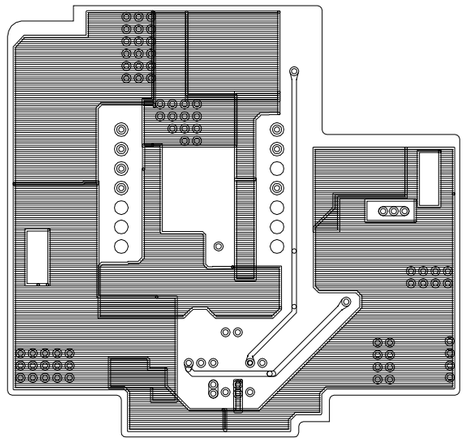
9-1 MAIN 2 (CONDUCTOR - PATTERN)



9-7 CCD (pattern)

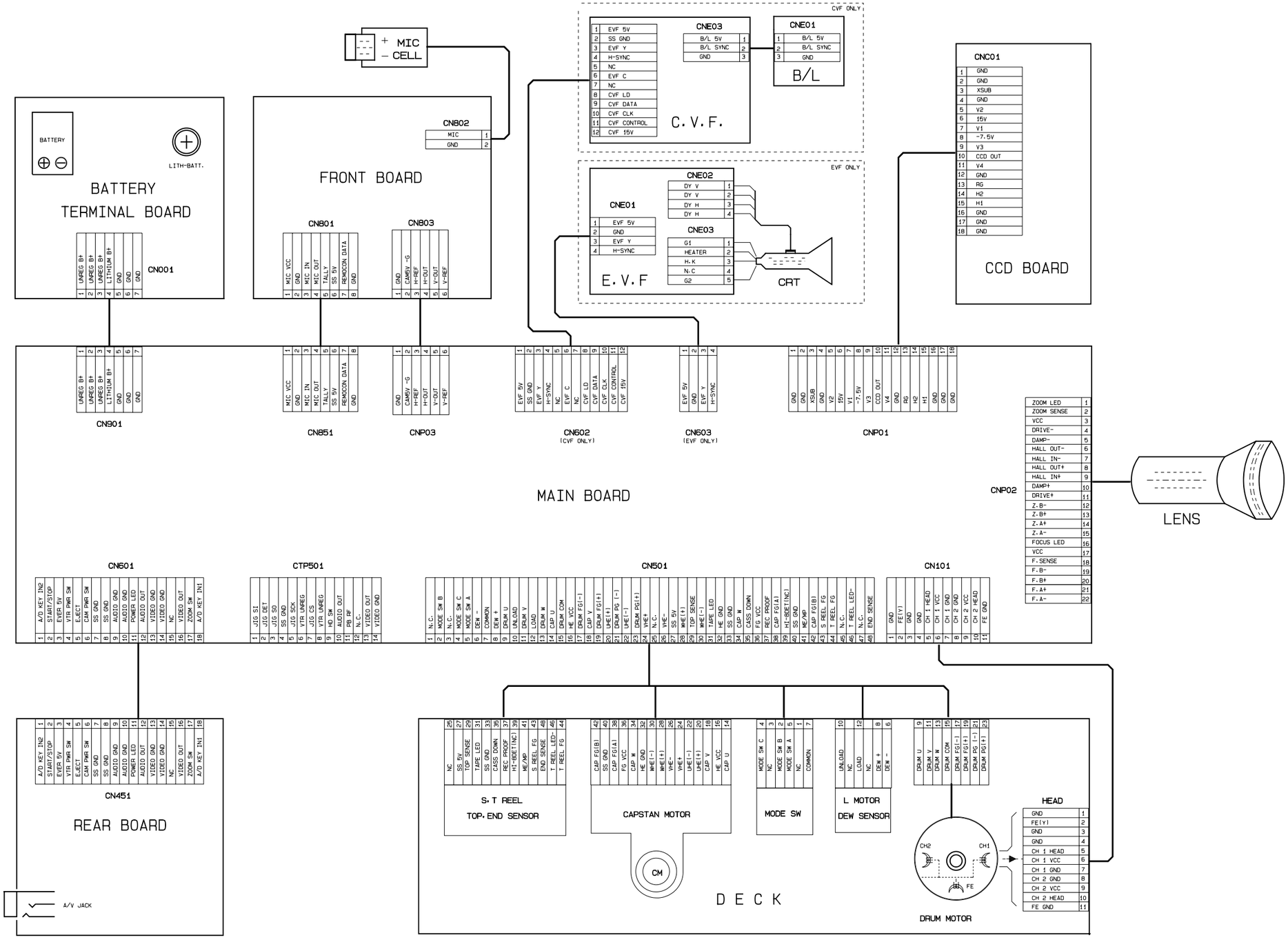


(Component Side)



(Conductor Side)

10. Wiring Diagram



11. Schematic Diagrams

Page

◆ Block Identification of Main PCB - - - - - - - - - - - - - - - 11-2

11-1 DC/DC Converter - 11-3

11-2 System Control/Servo - 11-4

11-3 Video - 11-5

11-4 Audio (Mono) - 11-6

11-5 Rear - 11-7

11-6 Terminal - 11-8

11-7 Camera Main/EIS - 11-9

11-8 CCD - 11-10

11-9 EVF(VP-A20/A22) - 11-11

11-10 CVF(VP-A21/A23) - 11-12

11-11 Adaptor - 11-13

11-14 Front - 11-14

Note

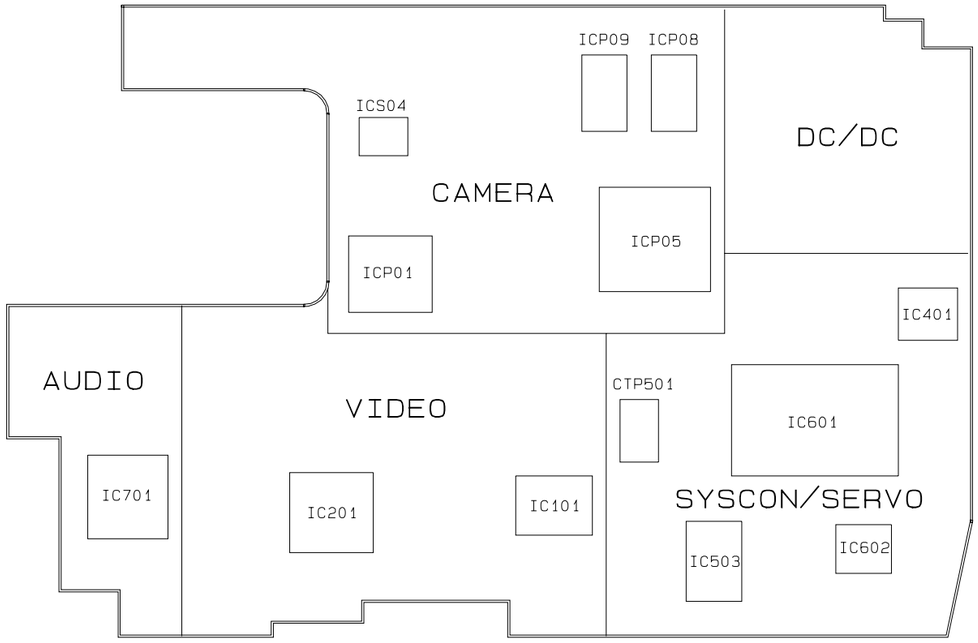
For schematic Diagram
- Resistors are in ohms, 1/8W unless otherwise noted.
- Circled numbers refer to waveforms.

Special note :
Most semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the “electrostatically sensitive (ES) devices” section of this service manual.

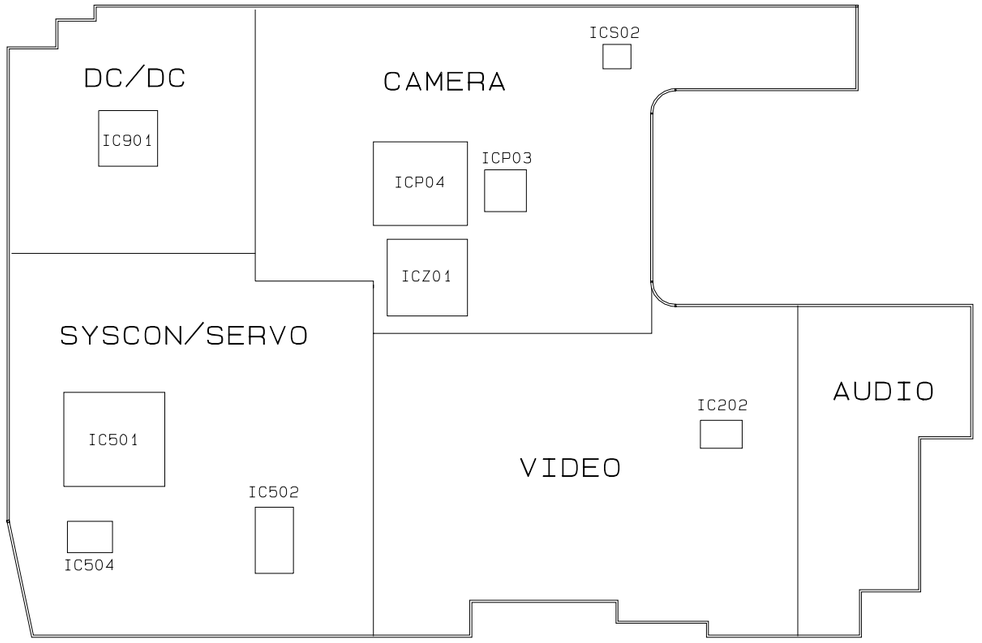
Note :
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list (may be slightly different or amended since this drawing was prepared).

Important safety notices :
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components. Use only the same type.

◆ Block Identification of Main PCB

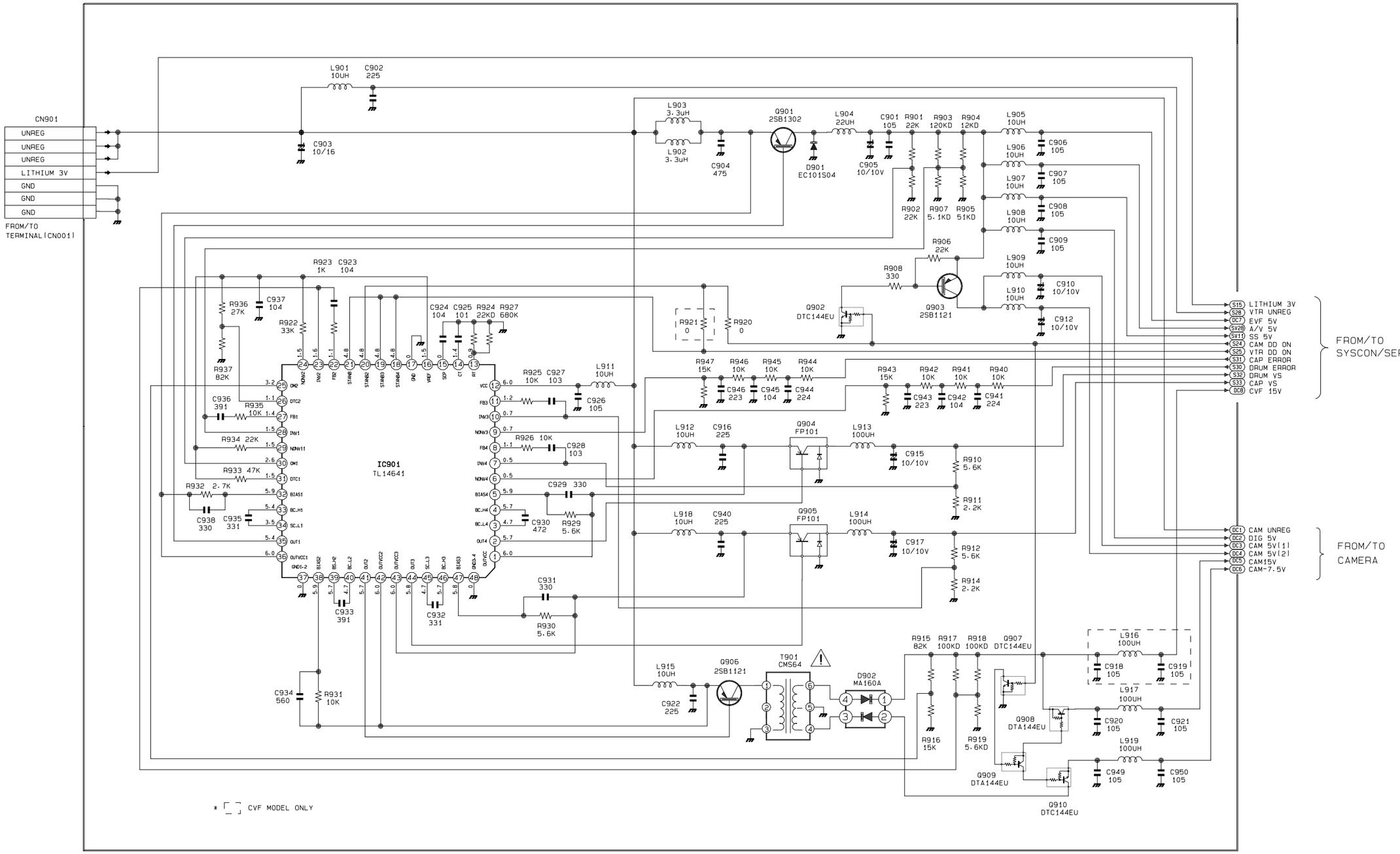


(Component Side)

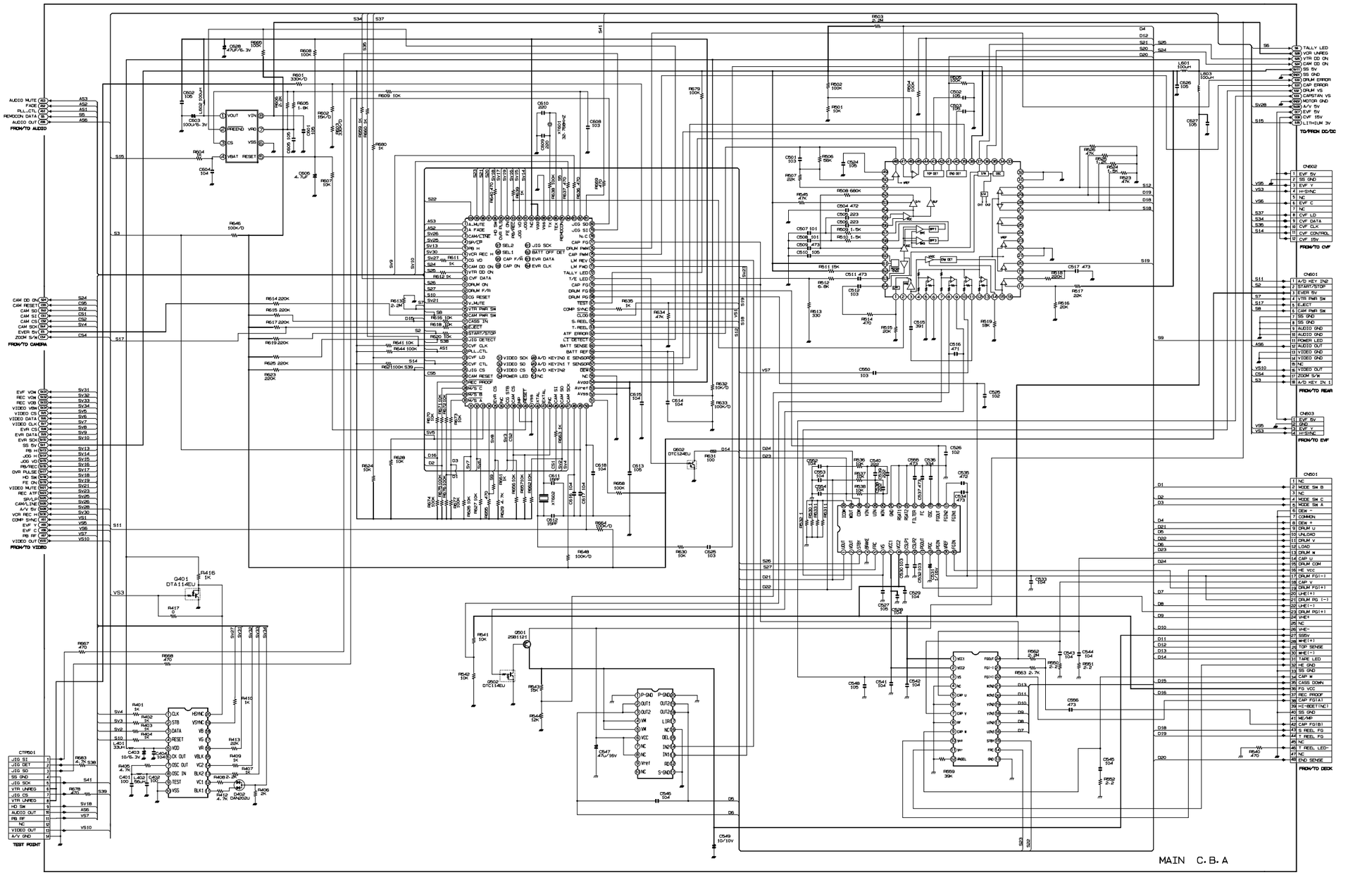


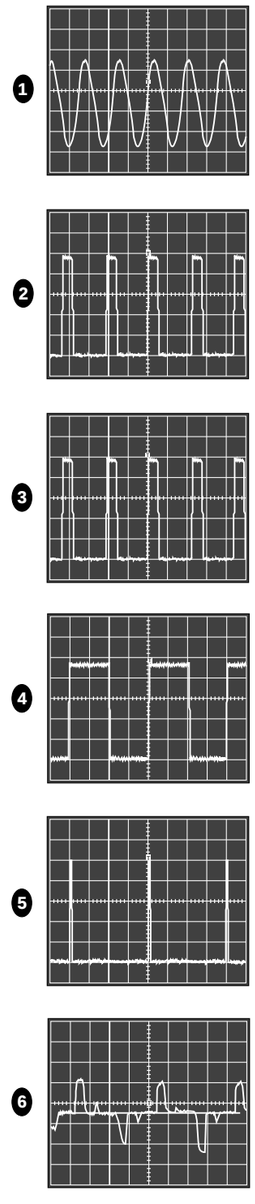
(Conductor Side)

11-1 DC/DC Converter

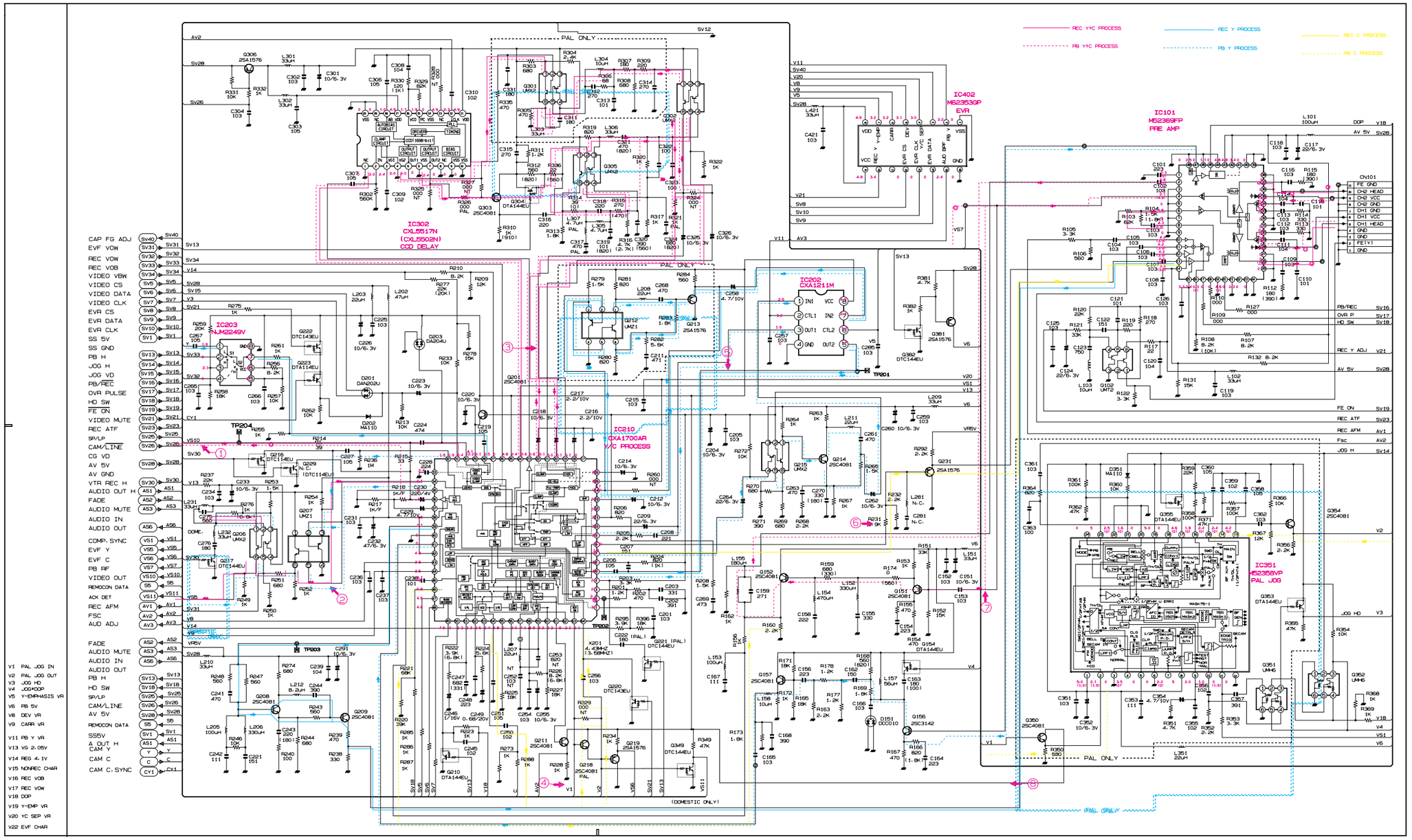


11-2 System Control/Servo

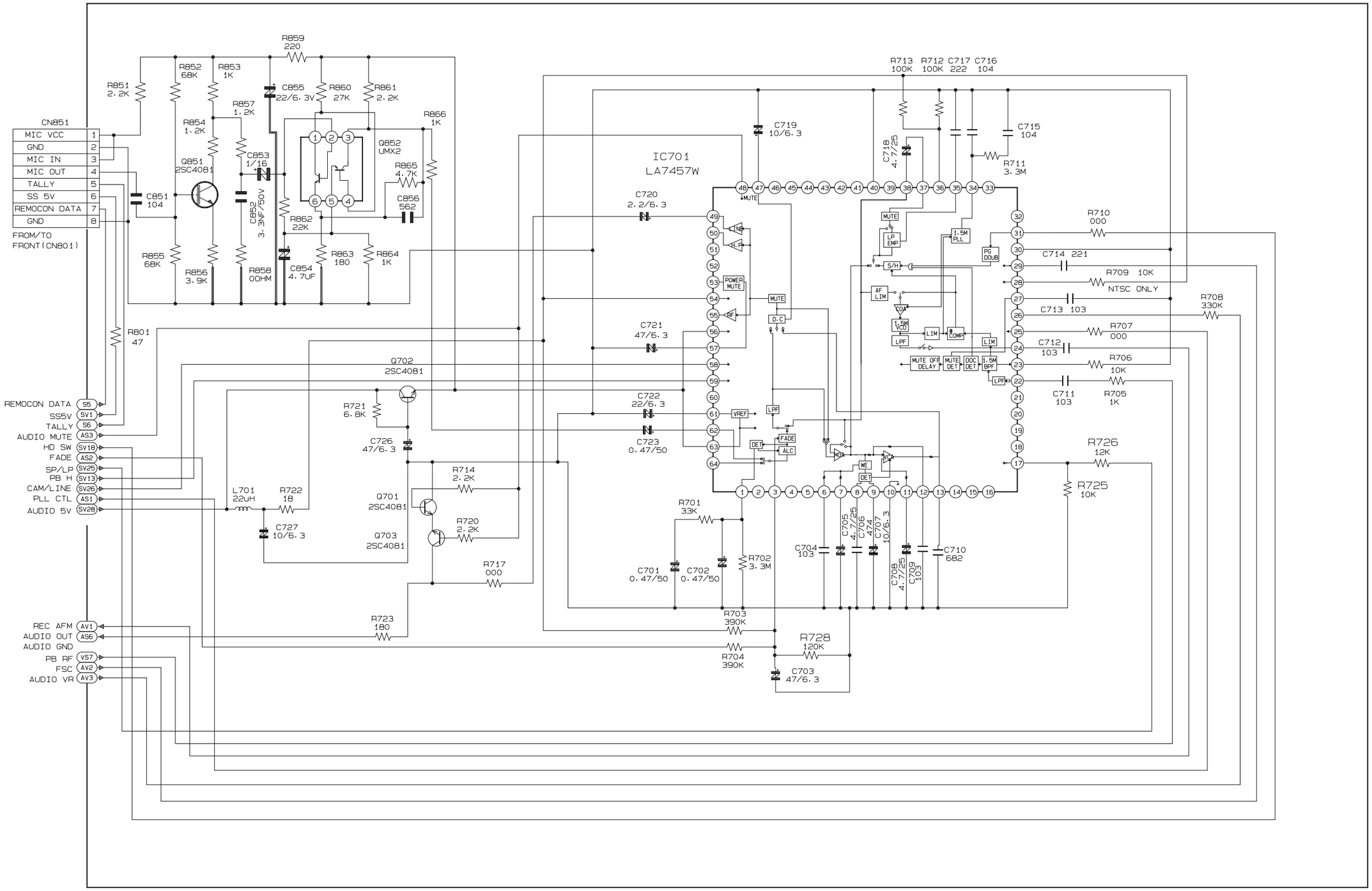




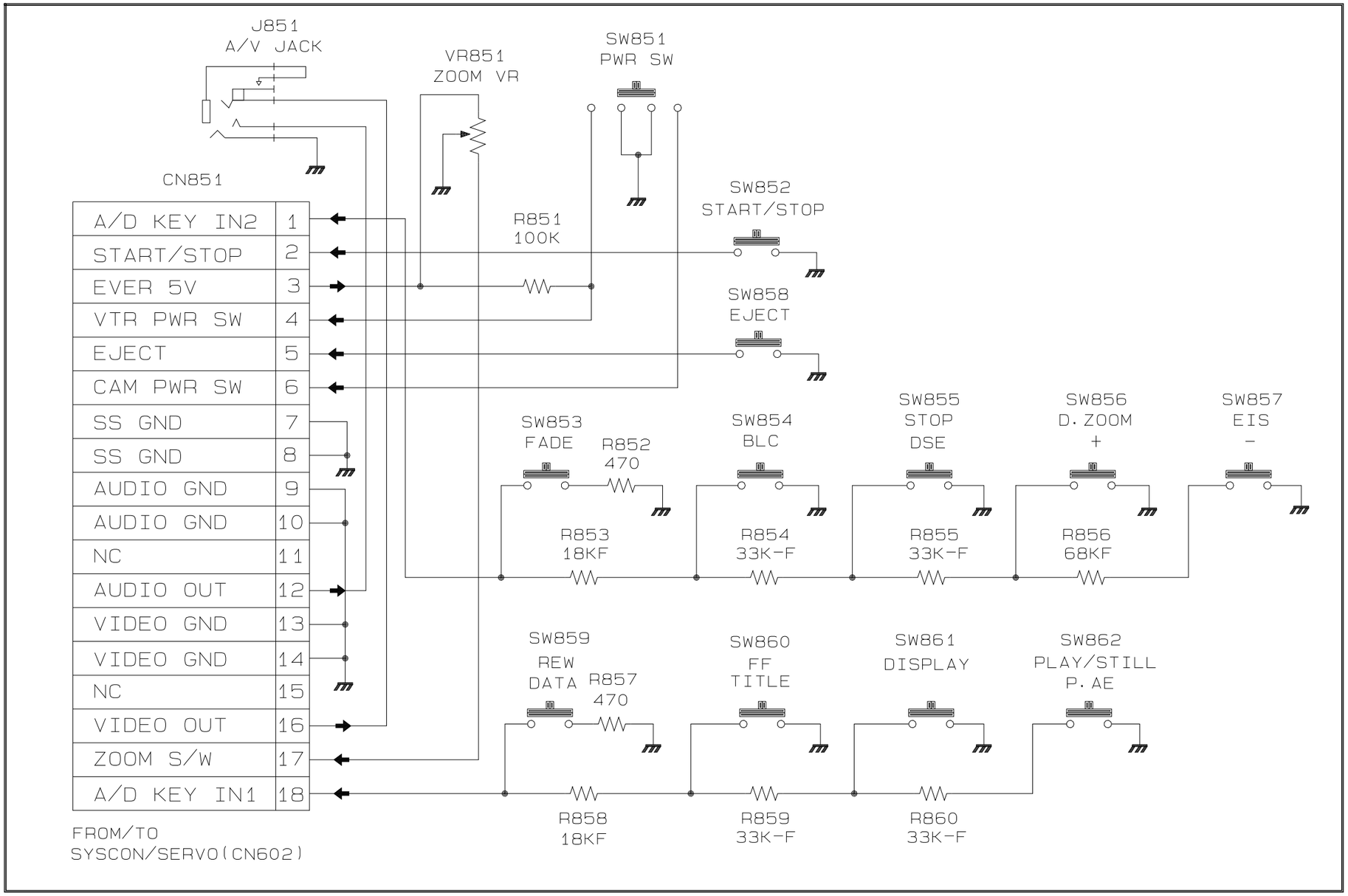
11-3 Video


REC Y+C PROCESS
PB Y+C PROCESS
REC Y PROCESS
PB Y PROCESS
REC C PROCESS
PB C PROCESS
IC302 CXL5517N (CXL5502N) CCD DELAY
IC203 NJM2249V
IC210 CXA1700AR Y/C PROCESS
IC202 CXA1211M
IC402 M62353GP EVR
IC101 M52369FP PRE AMP
IC351 62358VP PAL JOG
PAL ONLY
(DOMESTIC ONLY)
CAP FG ADJ
EVF VOW
REC VOW
REC VOB
VIDEO VBW
VIDEO CS
VIDEO DATA
VIDEO CLK
EVR CS
EVR DATA
EVR CLK
SS 5V
SS GND
PB H
JOG H
JOG VD
PB/REC
OVR PULSE
HD SW
FE ON
VIDEO MUTE
REC ATF
SP/LP
CAM/LINE
CG VD
AV 5V
AV GND
VTR REC H
AUDIO OUT H
FADE
AUDIO MUTE
AUDIO IN
AUDIO OUT
COMP. SYNC
EVF Y
EVF C
PB RF
VIDEO OUT
REMOCON DATA
ACK DET
REC AFM
FSC
AUD ADJ
FADE
AUDIO MUTE
AUDIO IN
AUDIO OUT
PB H
HD SW
SP/LP
CAM/LINE
AV 5V
REMOCON DATA
SS5V
A OUT H
CAM Y
CAM C
CAM C. SYNC
V1 PAL JOG IN
V2 PAL JOG OUT
V3 JOG HD
V4 JOGDOP
V5 Y-EMPHASIS VR
V6 PB 5V
V8 DEV VR
V9 CARR VR
V11 PB Y VR
V13 VG 2.05V
V14 REG 4.1V
V15 NONREC CHAR
V16 REC VOB
V17 REC VOW
V18 DOP
V19 Y-EMP VR
V20 YC SEP VR
V22 EVF CHAR
FE GND
CH2 HEAD
CH2 VCC
CH2 GND
CH1 GND
CH1 VCC
CH1 HEAD
GND
GND
FE(Y)
GND
DOP
AV 5V
PB/REC
OVR P
HD SW
REC Y ADJ
FE ON
REC ATF
REC AFM
Fsc
JOG H
JOG HD
1
2
3
4
5
6
7
8

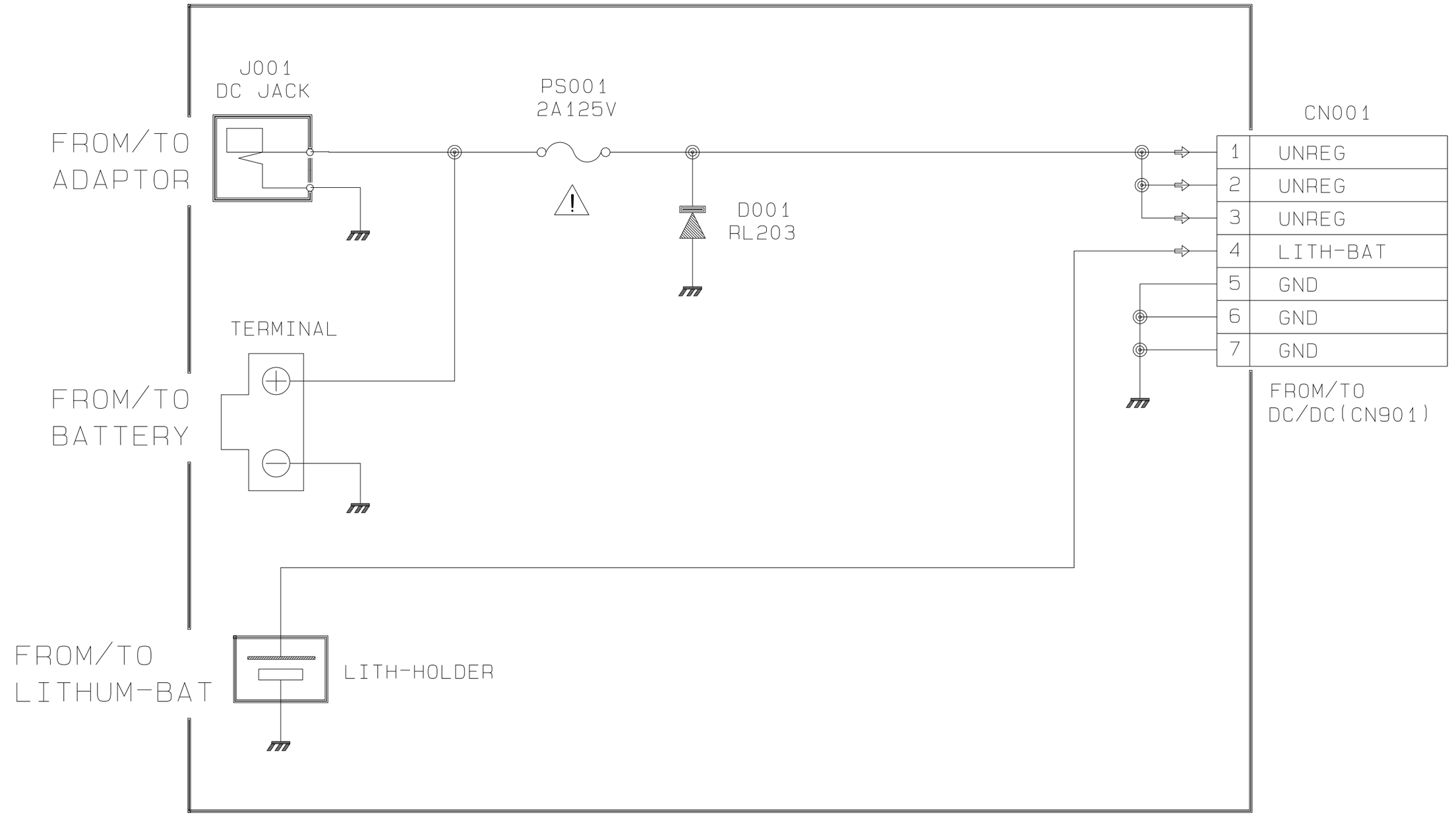
11-4 Audio (Mono)



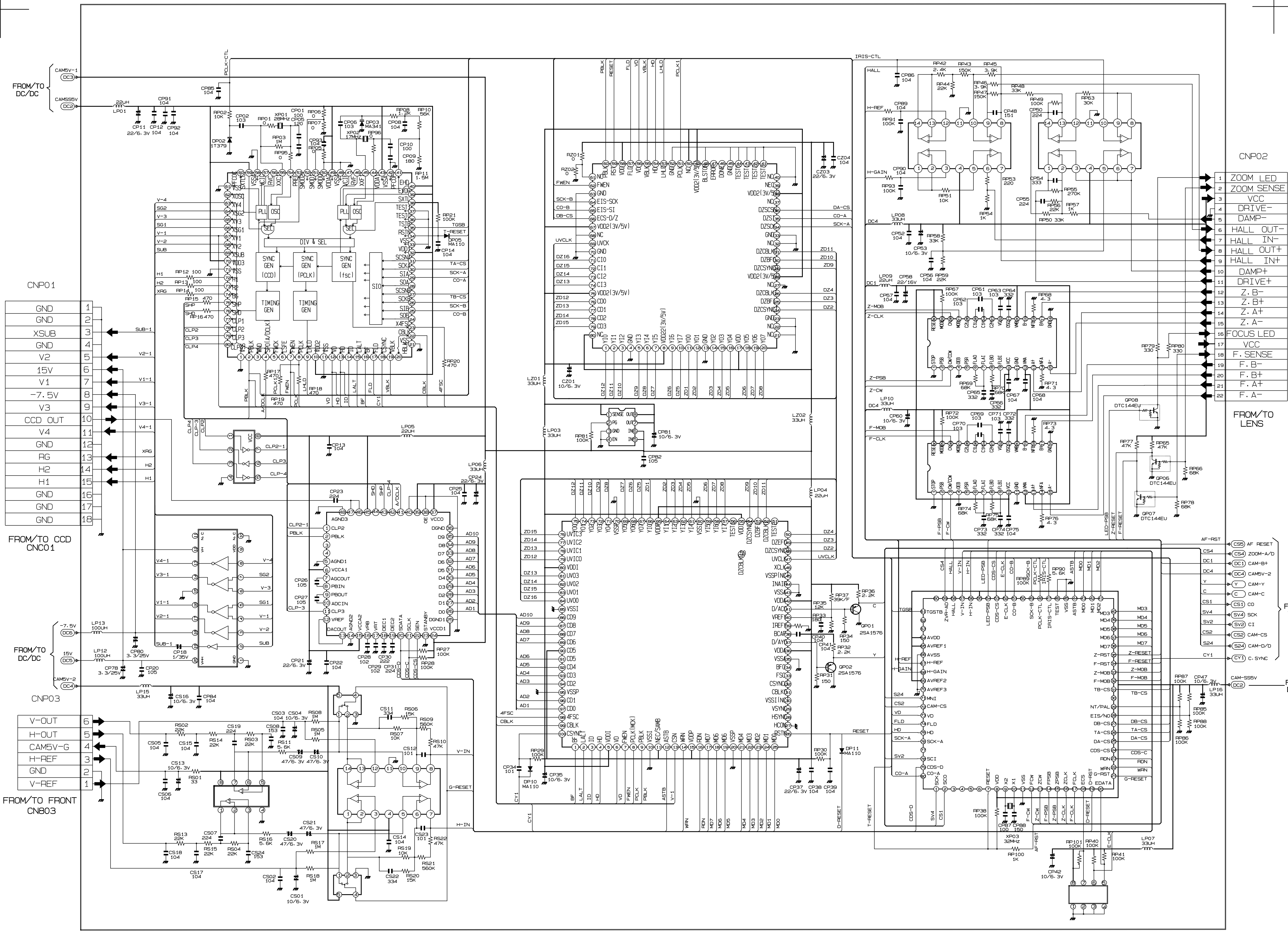
11-5 Rear

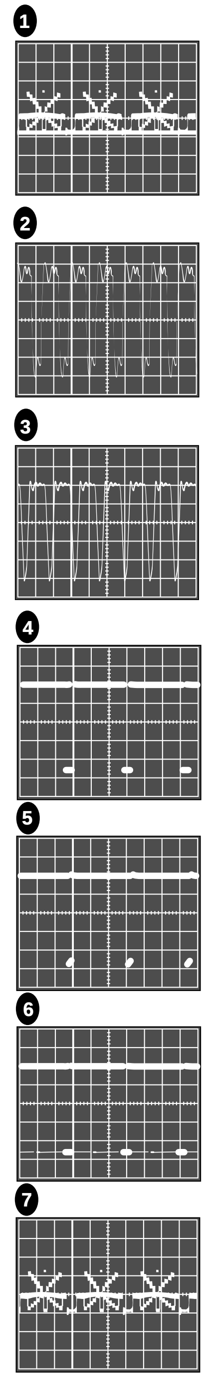

J851
A/V JACK
VR851
ZOOM VR
SW851
PWR SW
CN851
A/D KEY IN2 1
START/STOP 2
EVER 5V 3
VTR PWR SW 4
EJECT 5
CAM PWR SW 6
SS GND 7
SS GND 8
AUDIO GND 9
AUDIO GND 10
NC 11
AUDIO OUT 12
VIDEO GND 13
VIDEO GND 14
NC 15
VIDEO OUT 16
ZOOM S/W 17
A/D KEY IN1 18
FROM/TO
SYSCON/SERVO(CN602)
R851
100K
SW852
START/STOP
SW858
EJECT
SW853
FADE
R852
470
R853
18KF
SW854
BLC
R854
33K-F
SW855
STOP
DSE
R855
33K-F
SW856
D.ZOOM
+
R856
68KF
SW857
EIS
-
SW859
REW
DATA
R857
470
R858
18KF
SW860
FF
TITLE
R859
33K-F
SW861
DISPLAY
R860
33K-F
SW862
PLAY/STILL
P.AE

11-6 Terminal

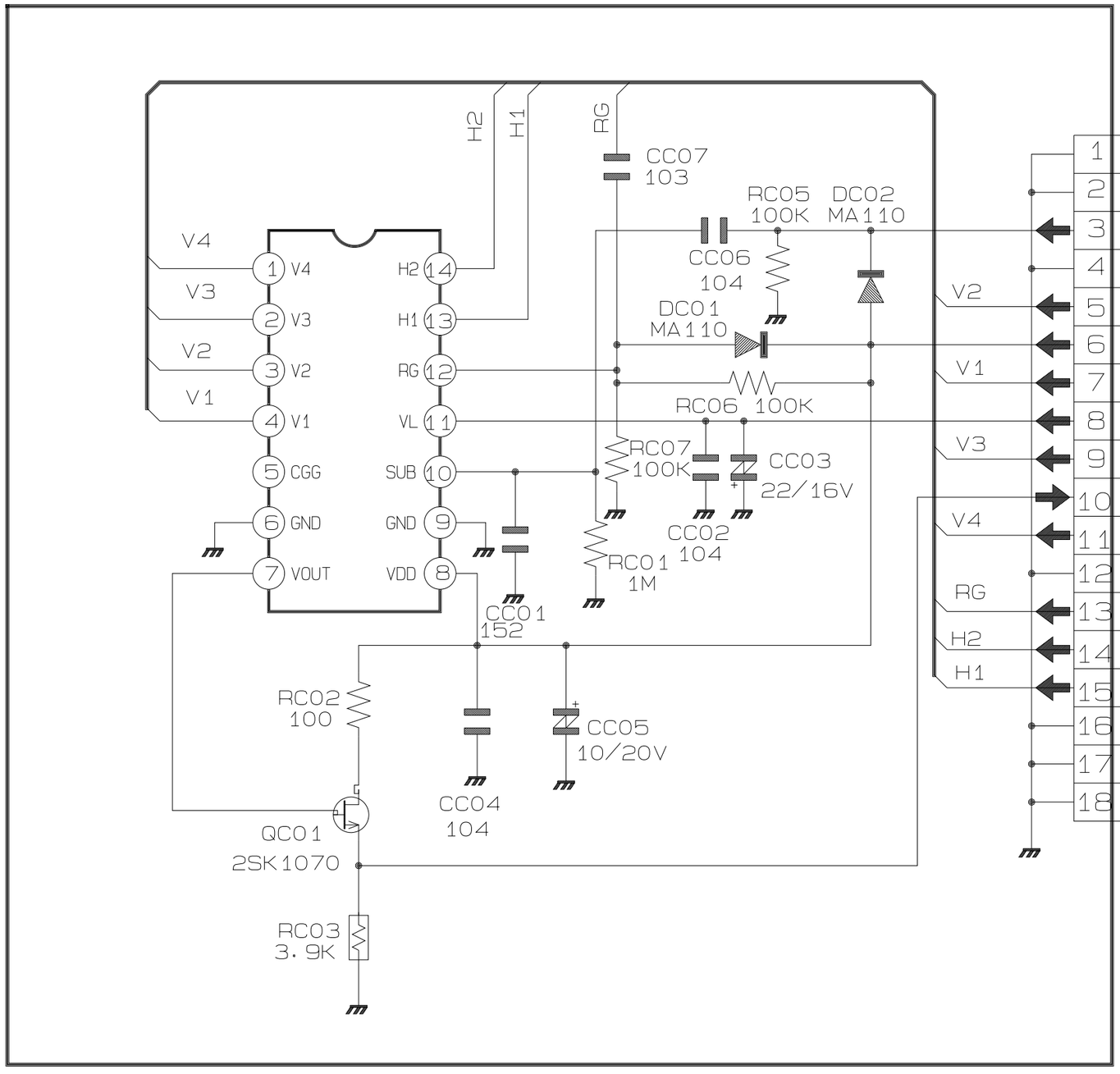


11-7 Camera Main

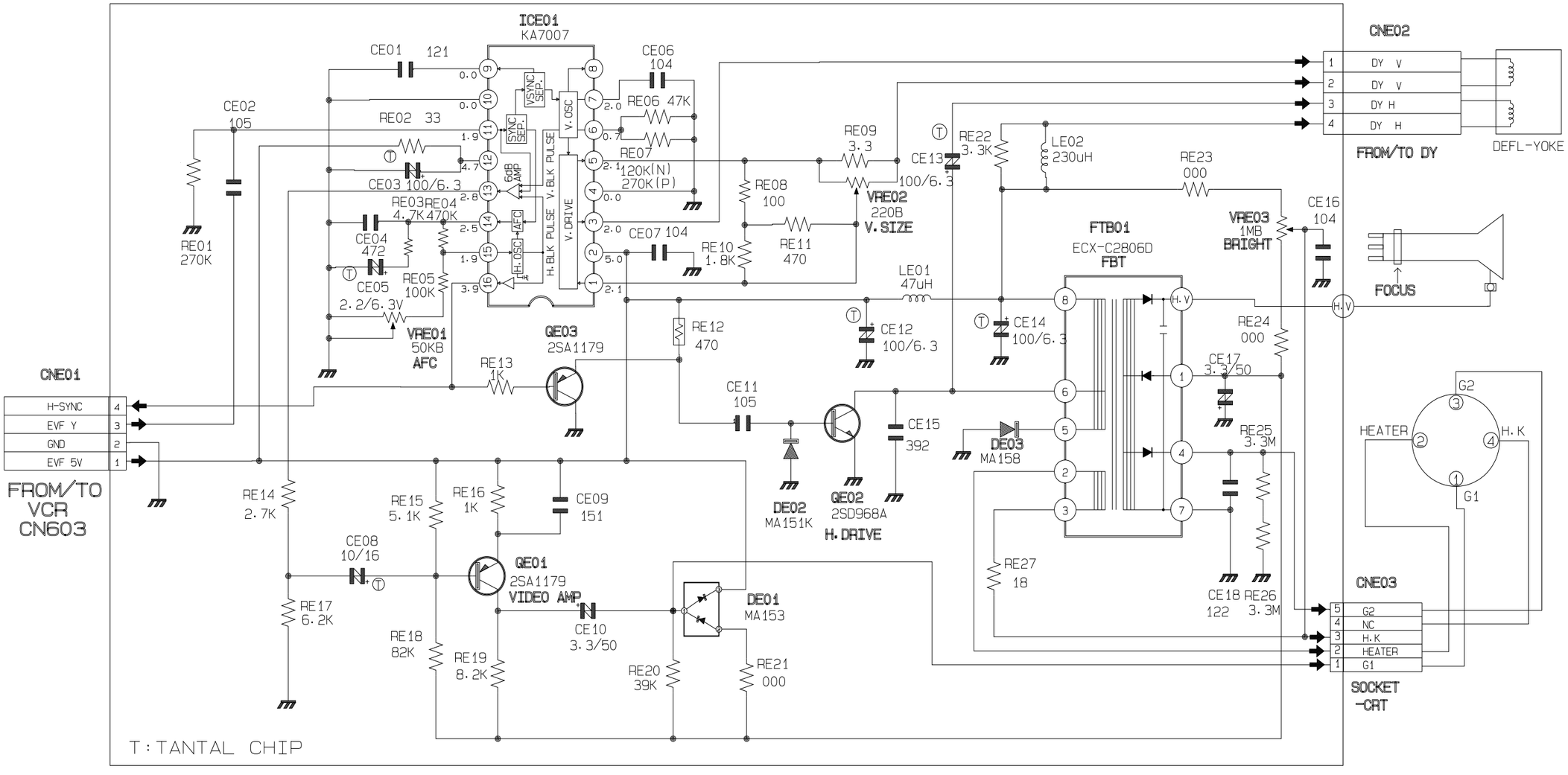

FROM/TO DC/DC
CAM5V-1
CAMSS5V
CNP01
1 GND
2 GND
3 XSUB
4 GND
5 V2
6 15V
7 V1
8 -7.5V
9 V3
10 CCD OUT
11 V4
12 GND
13 RG
14 H2
15 H1
16 GND
17 GND
18 GND
FROM/TO CCD CNC01
FROM/TO DC/DC
-7.5V
15V
CAM5V-2
CNP03
6 V-OUT
5 H-OUT
4 CAM5V-G
3 H-REF
2 GND
1 V-REF
FROM/TO FRONT CN803
CNP02
1 ZOOM LED
2 ZOOM SENSE
3 VCC
4 DRIVE-
5 DAMP-
6 HALL OUT-
7 HALL IN-
8 HALL OUT+
9 HALL IN+
10 DAMP+
11 DRIVE+
12 Z.B-
13 Z.B+
14 Z.A+
15 Z.A-
16 FOCUS LED
17 VCC
18 F.SENSE
19 F.B-
20 F.B+
21 F.A+
22 F.A-
FROM/TO LENS
AF RESET
ZOOM-A/D
CAM-B+
CAM5V-2
CAM-Y
CAM-C
CO
SCK
CI
CAM-CS
CAM-D/D
C.SYNC
FROM/TO VCR
CAM-SS5V
FROM/TO DC/DC



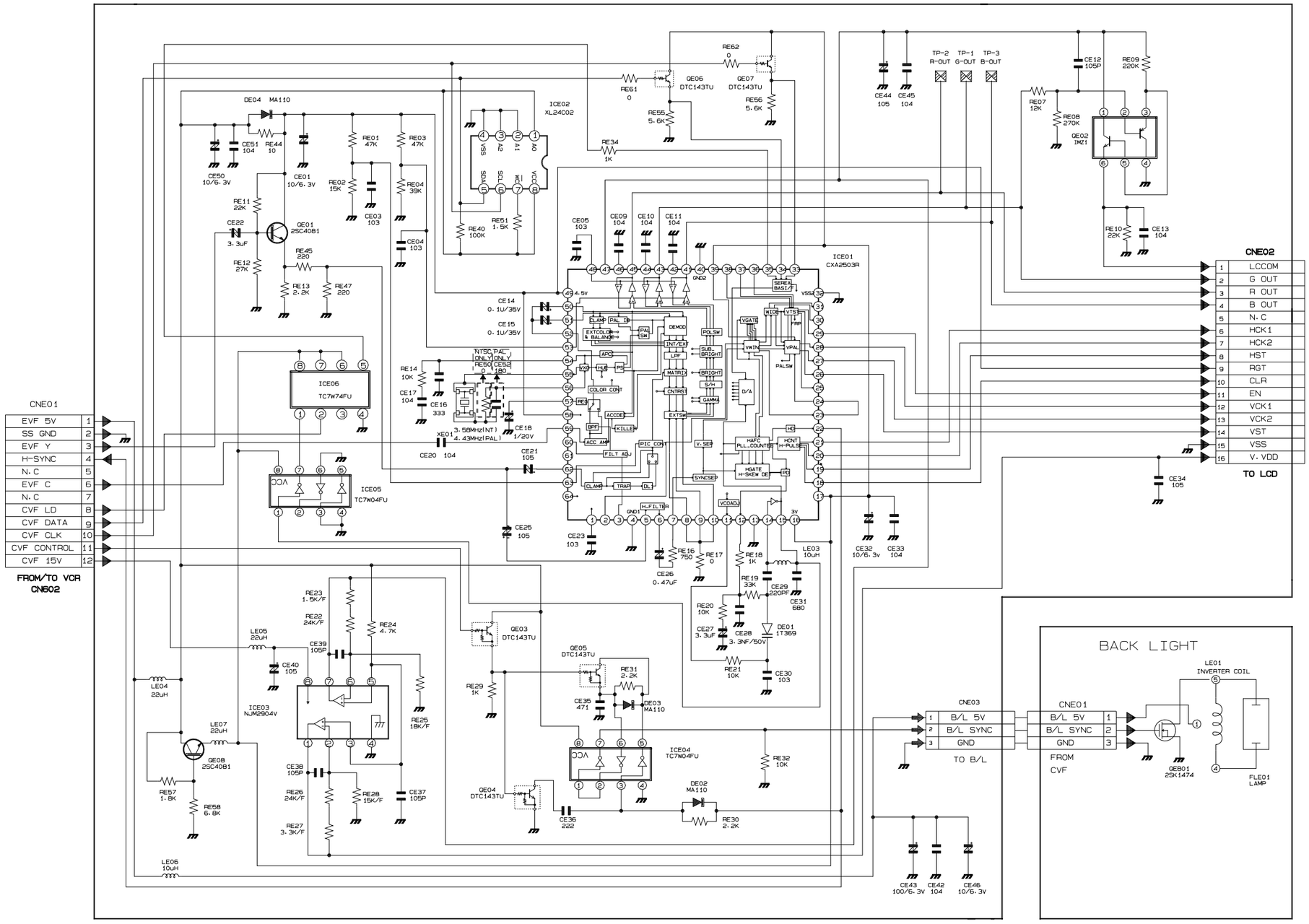
11-8 CCD


CNC01
1 GND
2 GND
3 XSUB
4 GND
5 V2
6 15V
7 V1
8 -7.5V
9 V3
10 CCDOUT
11 V4
12 GND
13 RG
14 H2
15 H1
16 GND
17 GND
18 GND
FROM/TO
CAMERA MAIN
CNP01
V4
V3
V2
V1
H2
H1
RG
VL
SUB
CGG
GND
VOUT
VDD
CC07 103
RC05 100K
DC02 MA110
CC06 104
DC01 MA110
RC06 100K
RC07 100K
CC03 22/16V
CC02 104
RC01 1M
CC01 152
RC02 100
CC05 10/20V
CC04 104
QC01 2SK1070
RC03 3.9K

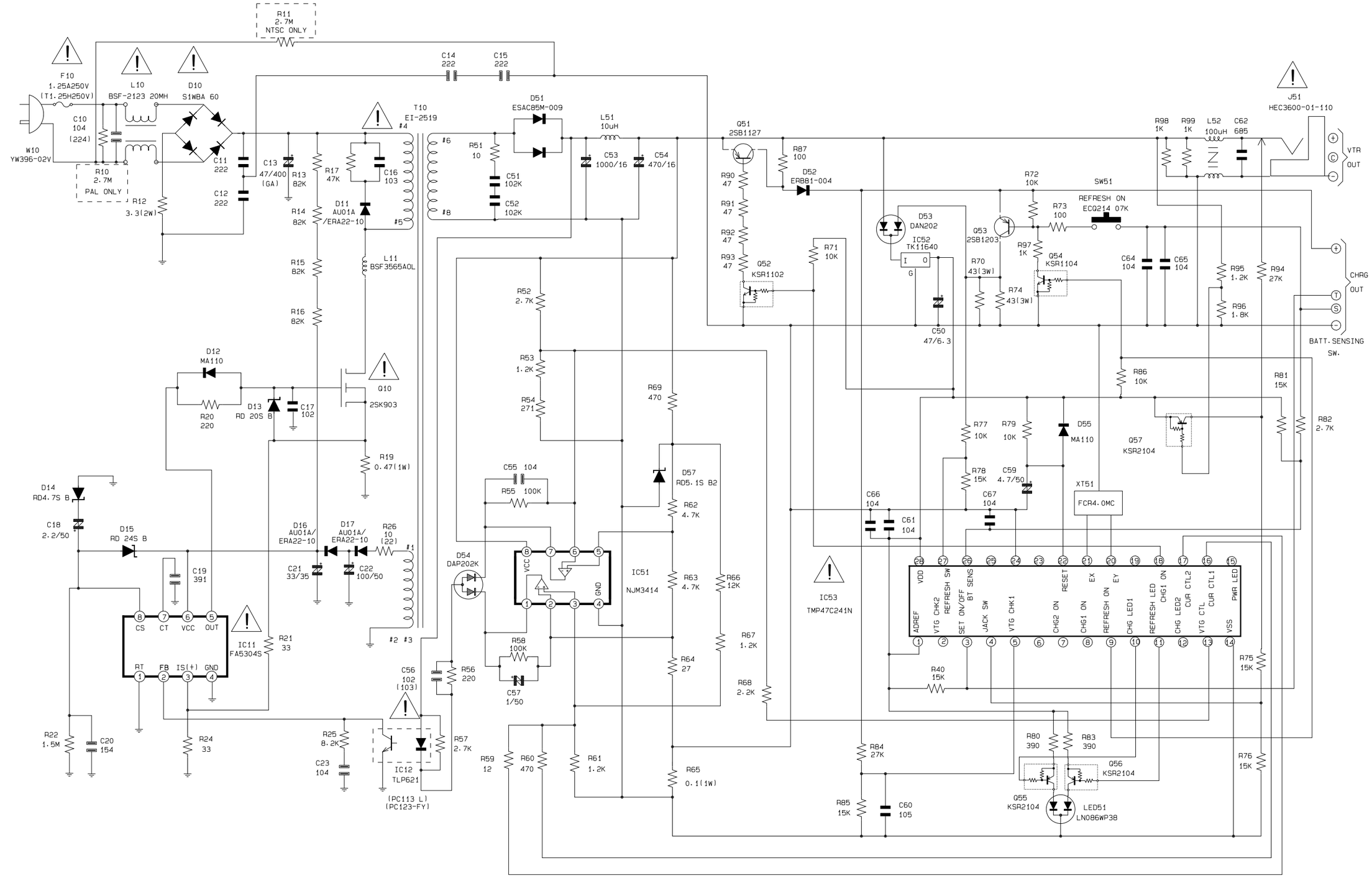
11-9 EVF (VP-A20/A22)



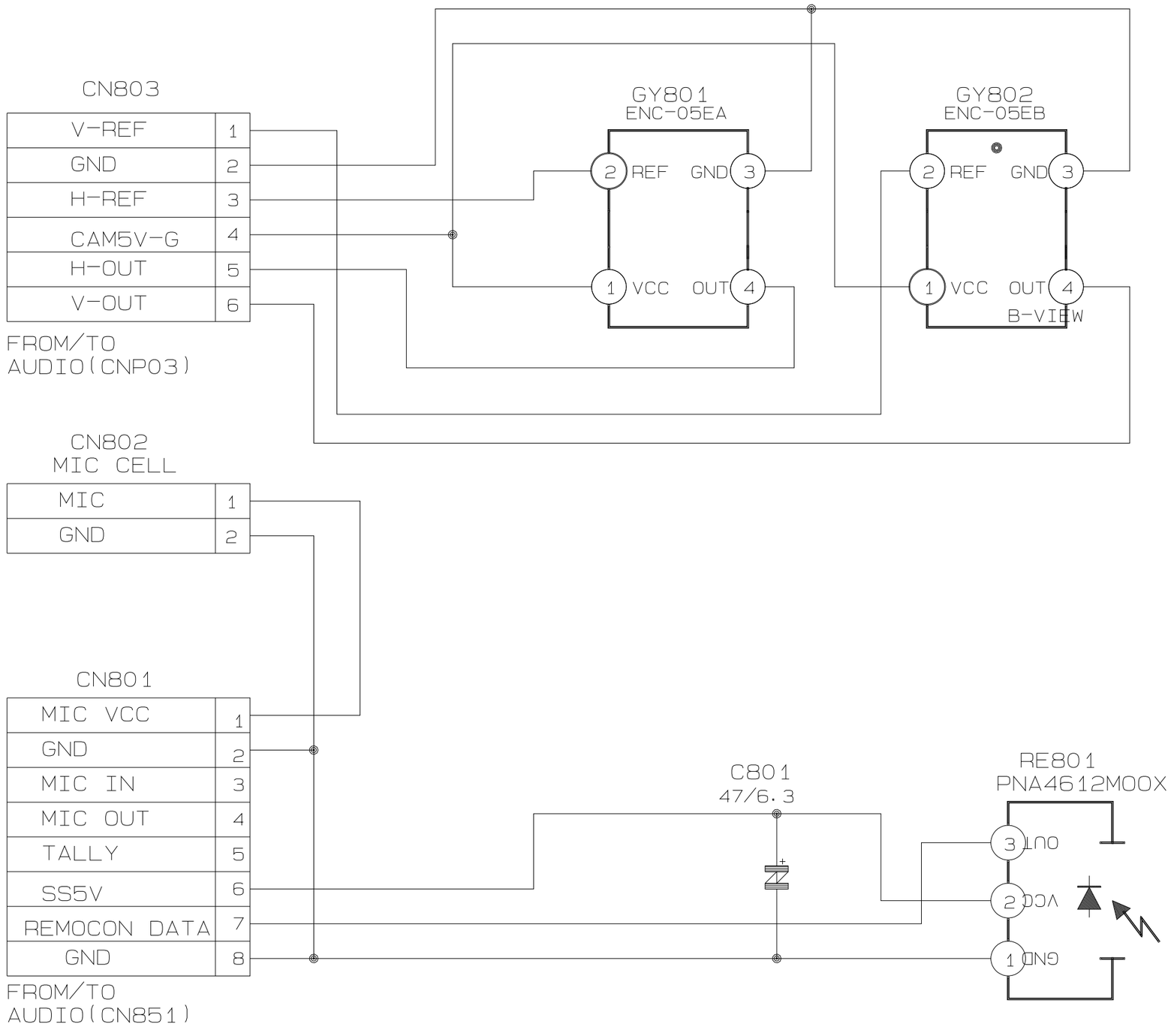
11-10 CVF (VP-A21/A23)



11-11 Adaptor

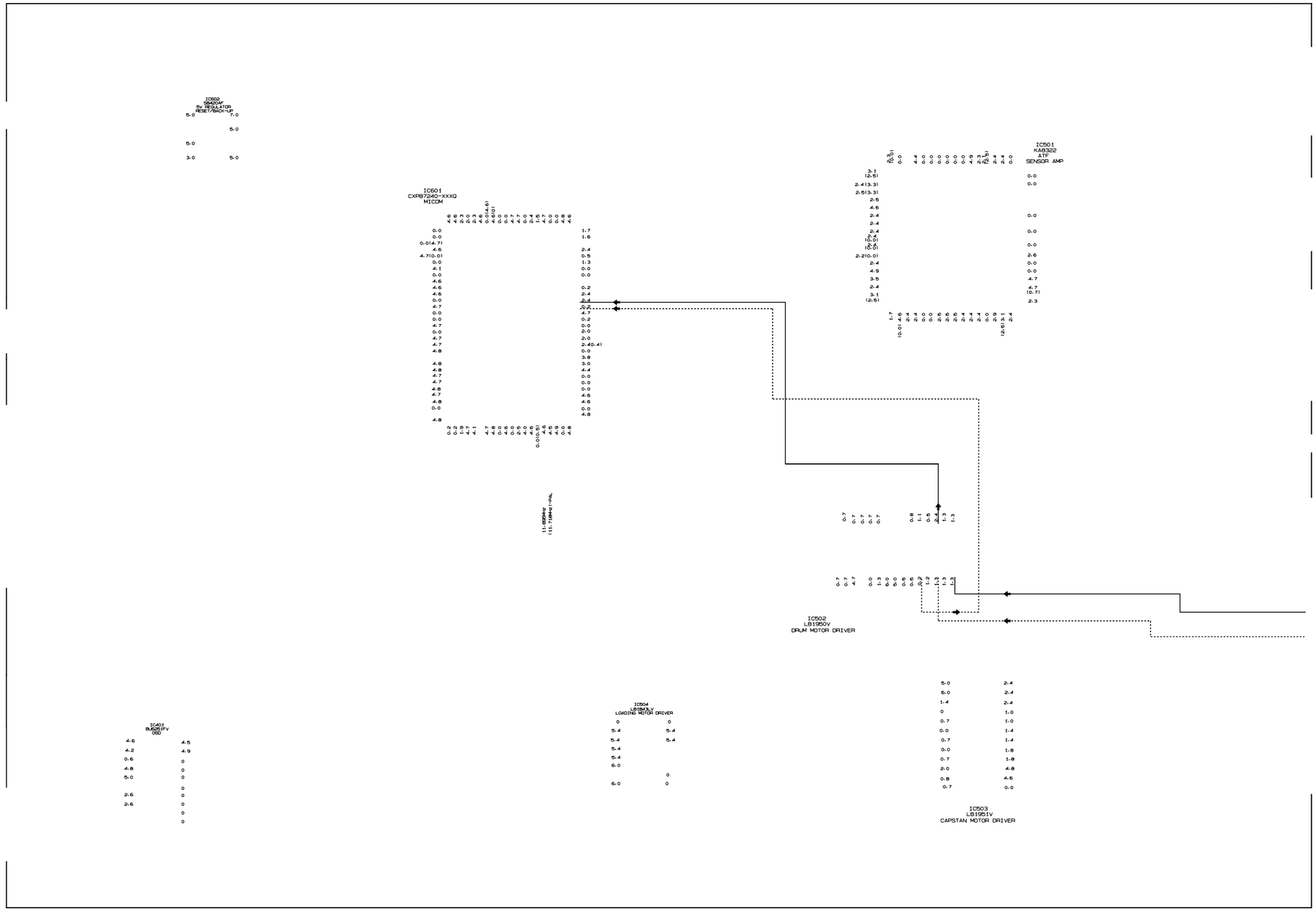


11-12 Front


CN803
V-REF 1
GND 2
H-REF 3
CAM5V-G 4
H-OUT 5
V-OUT 6
FROM/TO
AUDIO(CNP03)
GY801
ENC-05EA
2 REF
GND 3
1 VCC
OUT 4
GY802
ENC-05EB
2 REF
GND 3
1 VCC
OUT 4
B-VIEW
CN802
MIC CELL
MIC 1
GND 2
CN801
MIC VCC 1
GND 2
MIC IN 3
MIC OUT 4
TALLY 5
SS5V 6
REMOCON DATA 7
GND 8
FROM/TO
AUDIO(CN851)
C801
47/6.3
RE801
PNA4612M00X
3 OUT
2 VCC
1 GND

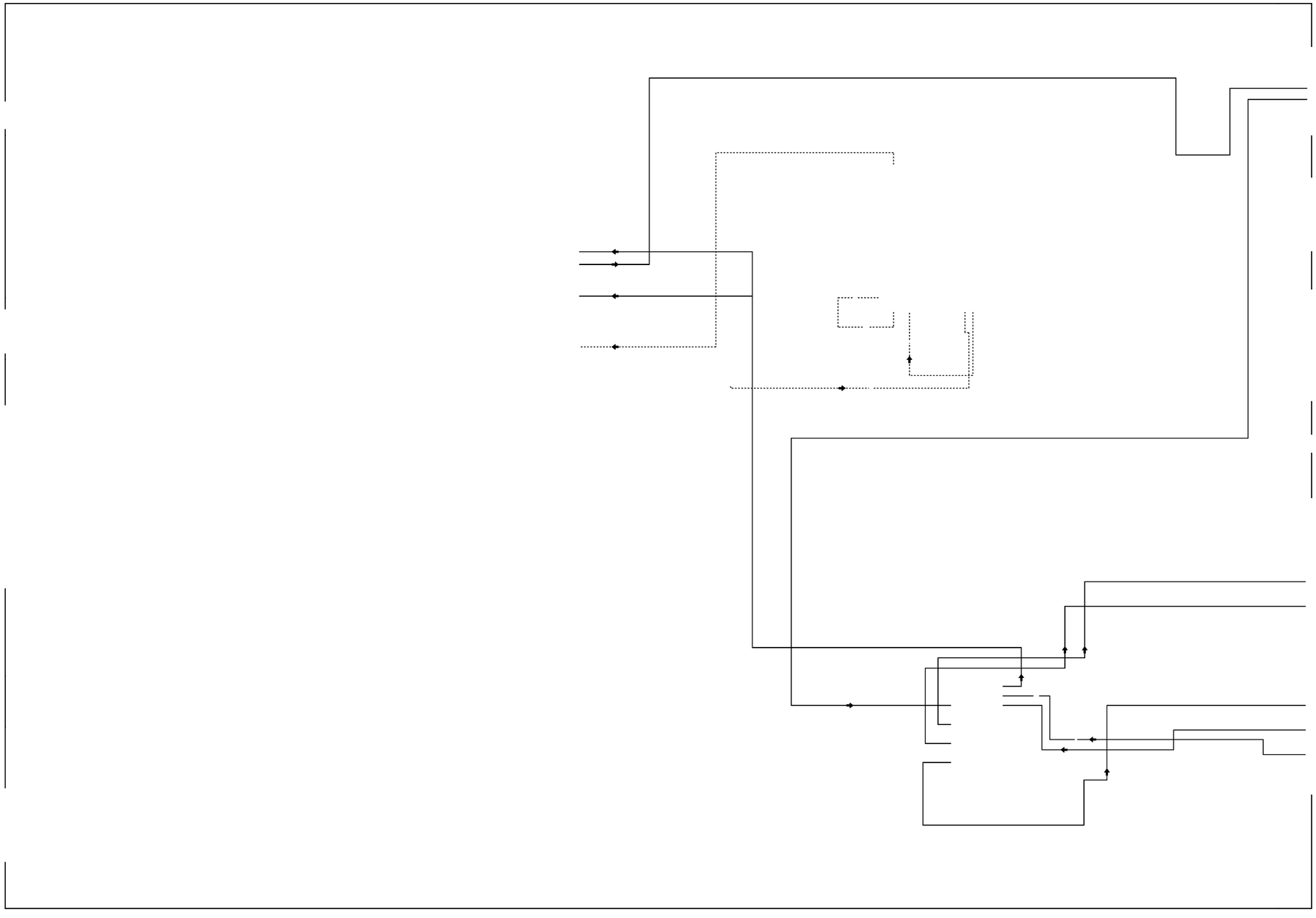
11-2 System Control/Servo(11-4 Page RED)

——— DRUM SPEED SERVO
---------- DRUM PHASE SERVO



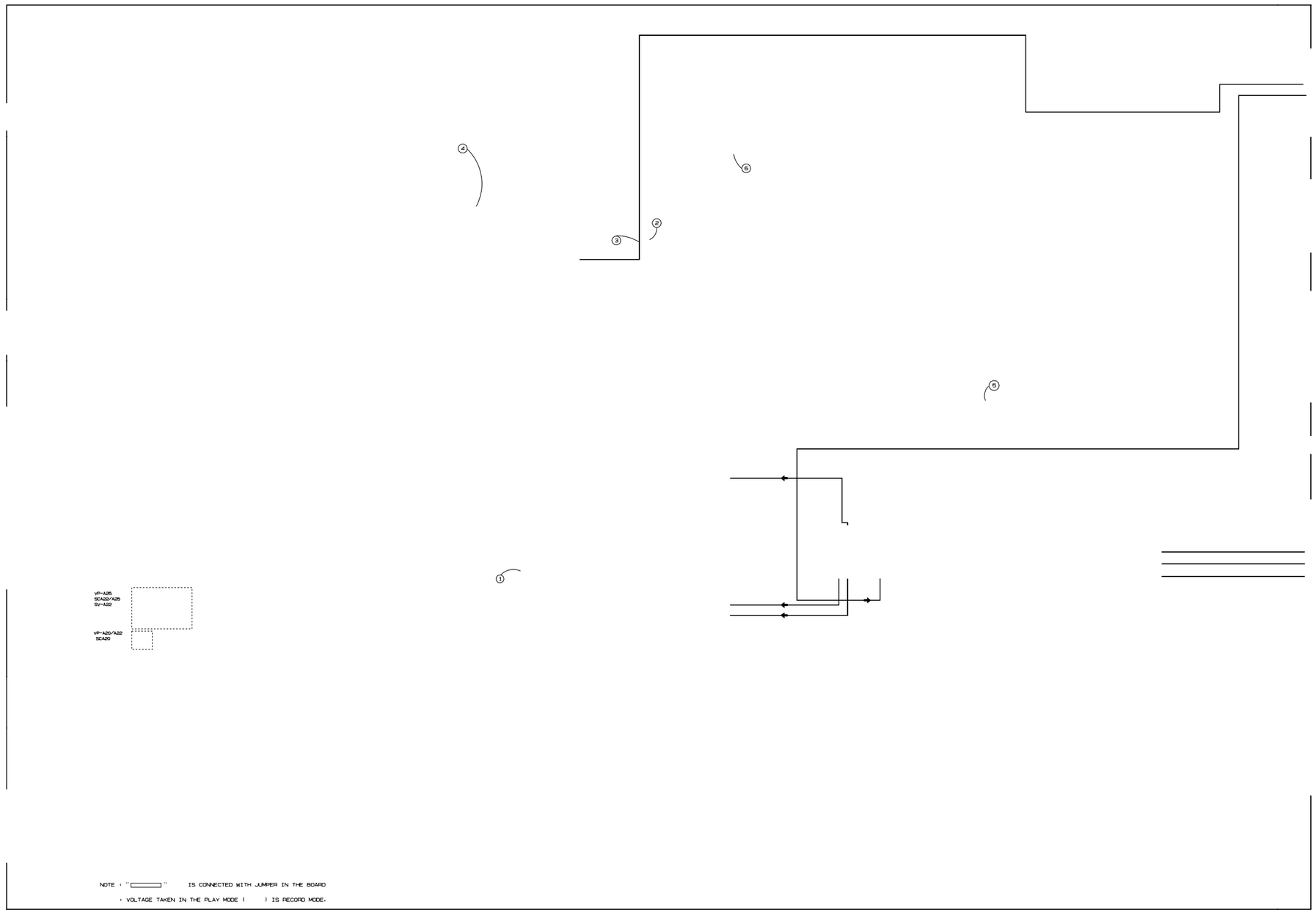
11-2 System Control/Servo (11-4 Page BLUE)

CAPSTAN SERVO (SPEED AND PHASE)
CAPSTAN PHASE SERVO



DRUM SERVO (SPEED AND PHASE)

11-2 System Control/Servo (11-4 Page GREEN)

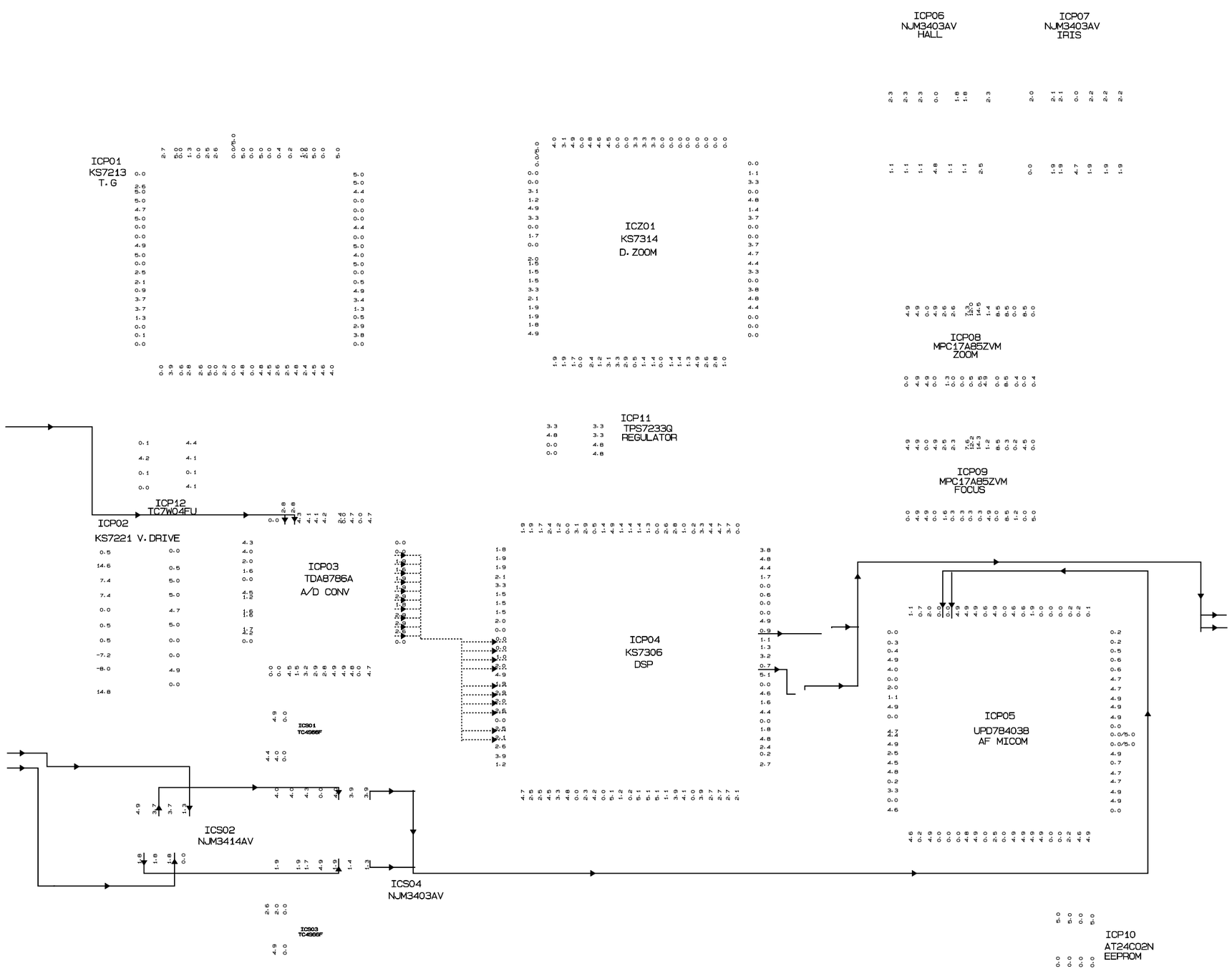


NOTE : "▭" IS CONNECTED WITH JUMPER IN THE BOARD

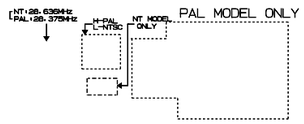
: VOLTAGE TAKEN IN THE PLAY MODE ( ) IS RECORD MODE.

11-7 Camera Main (11-9 Page RED)

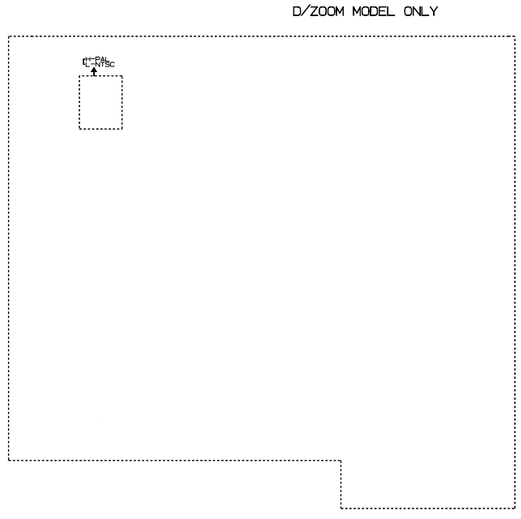
———— ANALOG SIGNAL
---------- DIGITAL SIGNAL



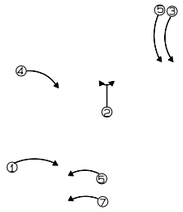
11-7 Camera Main (11-9 Page BLUE)



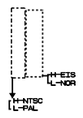
PAL MODEL ONLY



D/ZOOM MODEL ONLY



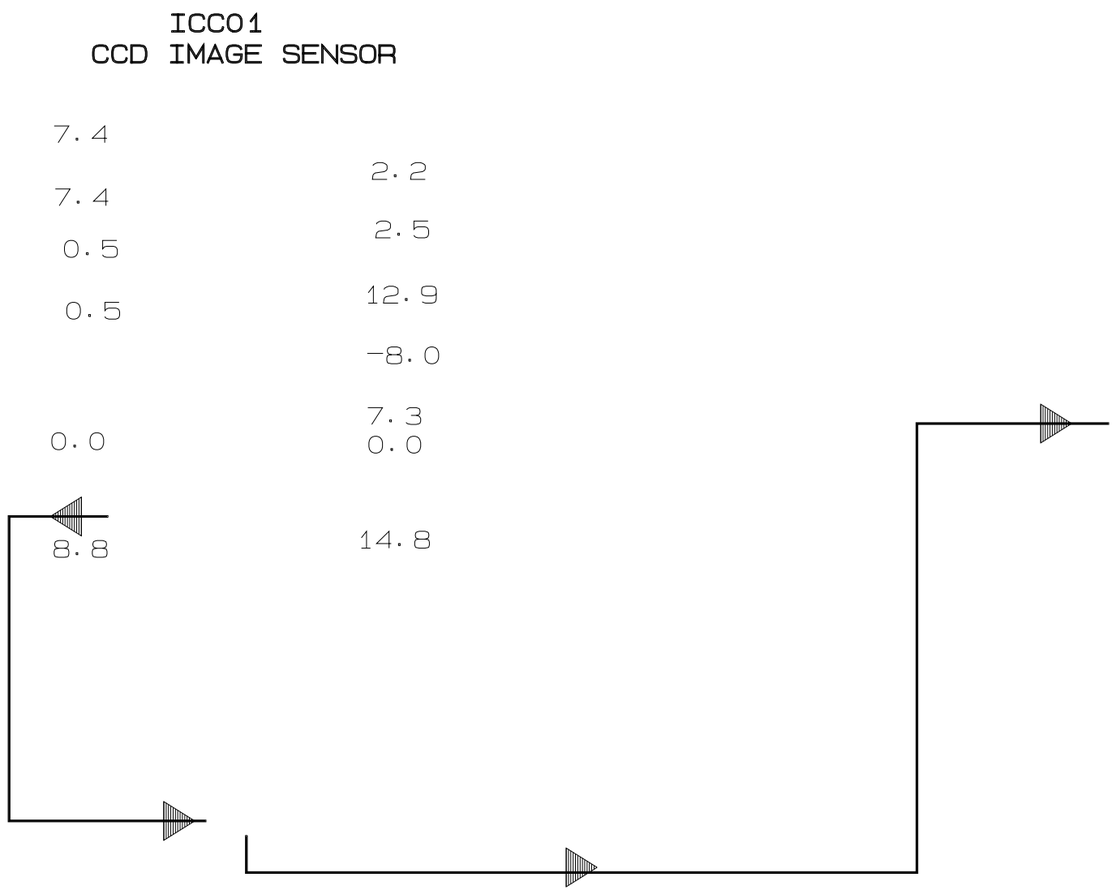
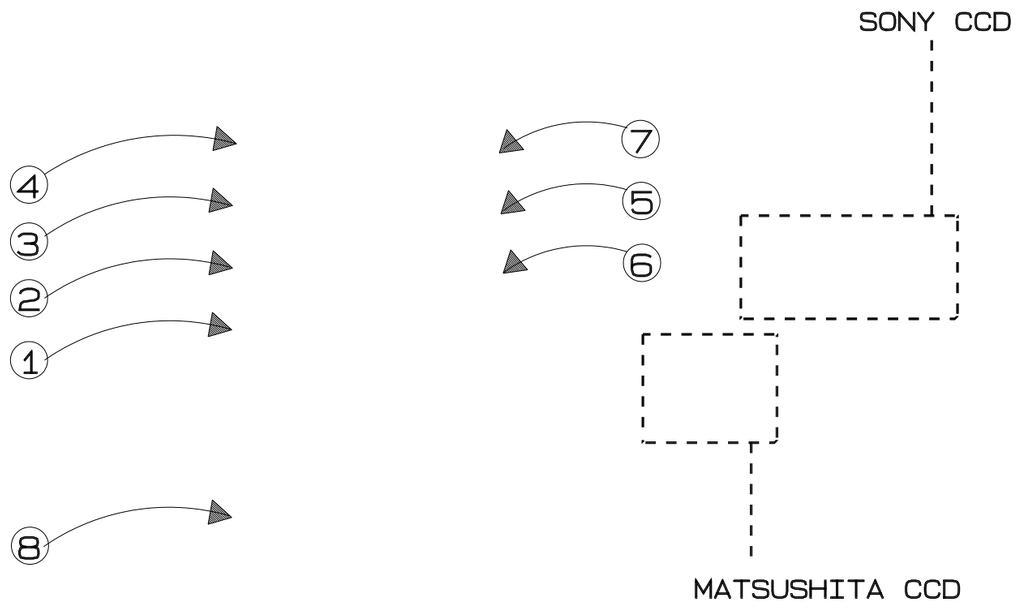
EIS MODEL ONLY



11-9 CCD (11-12 Page RED)

CCD OUT

ICC01 NTSC : ICX086AK-9
PAL : ICX087AK-9



11-9 CCD (11-12 Page BLUE)